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Year 2000: It's a crisis! It's a disaster! It's an investment opportunity!
In Depth, page 93

Product ... a stable, scalable ... platform ... opment tool set. Buyer's Guide ...

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Users side with Reno

▶ *Say Microsoft browser, OS should be separate*

By Carol Sliwa and Laura DiDio

THE JUSTICE DEPARTMENT'S attempt to slap Microsoft Corp. with a $1 million-per-day fine for alleged anticompetitive practices may not be playing well in Redmond, Wash., but it has struck a chord among users.

In an exclusive *Computerworld* survey of 100 information technology professionals who use Windows 95, 75% agreed with U.S. Attorney General Janet Reno that it is unfair of Microsoft to force PC makers to license Internet Explorer as a condition of licensing Windows 95.

"If the only game in town is Microsoft and its Internet Explorer 4.0, it will affect me," said Mike Jayjock, manager of risk assessment at Rohm and Haas Co., a Plexiglas manufacturer in Springhouse, Pa. Jayjock wasn't surveyed, but he shared the sentiments of many respondents:

"Restraining trade, becoming a fat monopoly and lack of competition hurts everyone, including Microsoft," he said.

Another user said the Justice Department flap, combined with Sun Microsystems, Inc.'s lawsuit against Microsoft over Java licensing, will cause him to steer clear of the Microsoft browser until the dust settles.

"Long term, I hope [Justice's action] will shake up the playing field so there's more real competition," said Phil Easter, technology strategist at Greyhound Lines, Inc. in Dallas.

Other users said the legal wrangling was unlikely to im-

Survey, page 16

Do you agree with the Justice Department's charge that Microsoft is using its Windows monopoly to gain unfair advantage in other product areas?

Base: 100 Windows 95 users

* Source: Computerworld Information Management Group, Framingham, Mass.

Universal Health CIO Linda Reino talks benefits and ballpark estimates instead of hammering out numbers

Fed up with the number crunching that typifies return on investment? There are easier ways to **gauge the payoffs** of your company's **IT projects** — and they're gaining in popularity as companies **shift their technology focus** from back-office systems and cost-cutting to efficiency and growth.

Managing, page 73

Native Java may cripple portability

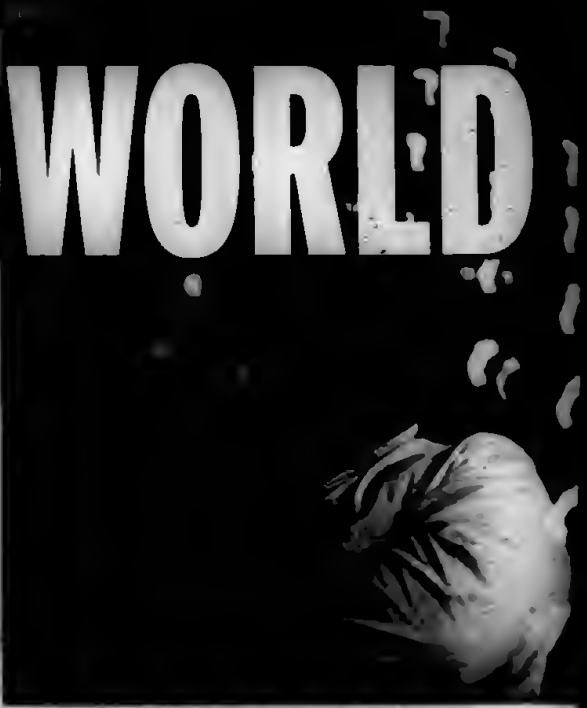
By Sharon Gaudin

SOME DEVELOPERS are nervous that what looks like a solution to Java's much-maligned sluggishness may dilute its cross-platform message.

Two of Java's biggest backers, Sun Microsystems, Inc. and IBM, are working on native code compilers designed to light a fire under Java's speed performance. But using a compiler on a Java application would mean killing its cross-platform capabilities, the very thing that garnered Java so much interest and market share.

"I'd much rather have them

Java, page 120



Owens Corning's Pete Dzubay checks criminal histories but relies more on "interviewing instinct" to determine whether an IS applicant gets hired

IS employers skip background checks

By Kim S. Nash and Julia King

IN THEIR DESPERATE rush to hire skilled technical workers, many companies are giving short shrift to one of the most basic steps in filling a job: background checks.

Why? They are afraid of losing a hot prospect in a highly competitive labor market.

But the lack of screening could come back to bite employers in the form of embezzlement, internal computer crimes, theft of trade secrets, workplace violence or legal liability for a worker's criminal actions outside the company.

The threat of insider abuses is real. An exclusive *Computerworld* survey of 104 businesses uncovered 19 cases of theft or fraud committed by internal information systems workers (see chart, page 28).

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No black hats

Now that Sun has stepped out of the chorus line to take its role as Microsoft's lead antagonist, it's worth putting both sides' arguments in perspective.

Despite what Sun and other Microsoft-haters would have you believe, the debate over Microsoft's business practices isn't a matter of good vs. evil.

It's about good business. Microsoft has a fiduciary duty to do what's in the best interests of its shareholders, and no company has done a better job of that in the past 10 years. Microsoft's efforts to control the Java language and exploit its advantage on the desktop to the benefit of the company's Internet efforts are consistent with that responsibility.

Likewise, Sun's legal threats and anti-Microsoft posturing are consistent with its business strategy of positioning itself as the Microsoft alternative.

If Sun were truly interested in making Java an open standard, for example, it would put Java in the public domain. By keeping Java proprietary, Sun is taking a calculated risk that it can establish an alternative to the Windows operating system. It's a long shot, but shareholders will be pleased if it succeeds.

Likewise, Microsoft will press its Internet Explorer initiatives in the face of significant legal threats because it believes it can win. Judging by its past performance, I'd call that a pretty good bet.

Microsoft's argument that users will be best served by a version of Java that's tightly integrated with Windows is compelling. Sun's counter that cross-platform capabilities are what counts has merit as well. Neither side is right or wrong in this contest. Both are trying to do what benefits them best by delivering a more attractive option to customers.

Let's stop trying to paint this contest as the black hats vs. the white hats. Sun and Microsoft are two smart companies that hope to cash in big on the Internet. May the best one win.

Paul Gillin, *Editor*
Internet: *paul_gillin@cw.com*

THE FIFTH WAVE

BY RICH TENNANT

"The new technology has really helped me get organized. I keep my project reports under the PC, budgets under my laptop and memos under my pager."

E-mail Rich Tennant at thewave@tiac.net

Bomb ticking for voice, data nets

▸ ITU telecos test for year 2000 compliance

By Matt Hamblen

WHILE COMPANIES scramble to get their internal software applications ready for the year 2000, another millennium bomb is ticking for global voice and data networks.

Analysts and vendors disagree about the extent of the threat, with some saying international calls won't get through.

The biggest problems are likely to stem from billing and call-center software that rely on two-digit year fields, analysts said.

For example, if a data or voice transmission begins at 11:55 p.m. on Dec. 31, 1999, and ends 10 minutes later, the caller could be billed for a 100-year phone call.

Also, noncompliant switches need to be physically swapped out, primarily in countries where older models are still in use. The global dilemma is that even the most powerful or technologically sophisticated country or company may at times rely on a weak link to the worldwide network.

YEAR 2000

The International Telecommunication Union (ITU) in Geneva last week responded to pleas from several companies and announced that it is moving into high gear on a program to prevent global network problems.

"We think that [the ITU announcement] is great, but our concern is that it might be too late," said Michael Cooke, head of worldwide year 2000 product compliance at Nortel, Inc. in Ottawa. "We've been wondering when the rest of the world was going to try to put together standards."

Year 2000 analyst Peter de Jager added, "Before, the ITU said, 'Why should we get involved?' and now they've obviously looked further and said, 'Now, hold on, this is worse than we thought.'" The ITU said it plans to monitor data and voice carriers and equipment vendors worldwide for their year 2000 readiness and begin posting the results on a World Wide Web site by year's end. It also will develop a contingency plan if problems develop on Jan. 1, 2000.

"We have to be extremely vigilant about this and ... have a timetable to make sure networks aren't affected," said Francine Lambert, a spokeswoman for the ITU.

"No major disruptions are expected in international networks, [but] it is clear carriers will be affected in a number of ways in whatever transactions call upon the use of [two-digit] dates," said Geza Gosztony, chairman of an ITU study group.

The ITU called on carriers to test international network links by the end of next year, but it acknowledged that testing might not be done in some countries until only 90 days before the year 2000.

"I think the telecom industry is cooperating like you've never seen before on this one, because if one part of the network goes down, it drags everybody else into the mud."
– Michael Cooke, Nortel

The ITU, an agency of the United Nations, represents 188 countries and more than 450 companies.

"I think the telecom industry is cooperating like you've never seen before on this one, because if one part of the network goes down, it drags everybody else into the mud," Cooke said.

Nortel asked the ITU to take a lead role a month ago after it attempted a comprehensive approach of its own with several U.S.-based local carriers.

A major provider of large network switching equipment worldwide, Nortel recently announced that its Meridian line of switches are year 2000-compliant.

Nortel officials said last week that the company will work with British Telecommunications PLC to provide the ITU with data on year 2000 readiness.

Several major U.S.-based vendors and carriers last week said they are studying their own networks and equipment but confessed that tests of interoperability with other companies' networks and equipment aren't as far along. "We've not gotten that far in the plan," said a spokesman for Ameritech Corp. in Chicago. "We've been busy doing our own thing."

BILLING SOFTWARE

A Sprint Corp. official in Kansas City, Mo., said year 2000-ready billing software was made interoperable with other vendors two years ago, but mainly in the U.S.

"It's a good idea" that the ITU is involved, said Bob Bender, director of systems development at Sprint. "We should have some group checking up on the global question."

AT&T Corp. in Basking Ridge, N.J., last week said it hired NCR Corp. in Dayton, Ohio, to make its networks year 2000-ready. AT&T said its goal is to have its network 90% repaired and tested by the end of next year.

Lucent Technologies, Inc., also in Basking Ridge, has announced its older Horizon and Dimension switches aren't compliant but that its new Definity switch is. Based on sales of Definity and other devices, Lucent believes its customers are 95% compliant. □

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IRS faces massive year 2000 project

▸ *CIO says he doesn't trust agency's numbers*

By Sharon Machlis

WITH ABOUT 80 mainframes, 2,000 minicomputers and servers and more than 100,000 desktop systems, the Internal Revenue Service may have the largest civilian data processing operation in the federal government.

Now the agency, which has been repeatedly criticized for its inability to manage large information technology projects, has to ensure that all those systems will be ready when the year 2000 rolls around.

The head of the House technology subcommittee, Rep. Stephen Horn (R-Calif.), recently gave a D- rating to the IRS's parent organization, the Treasury Department, for year 2000 work so far. And IRS Chief Information Officer Arthur Gross was recently quoted in an Information Technology Association of America electronic-mail bulletin as saying he isn't sure he can trust numbers that show that 86% of the agency's conversion efforts are on schedule.

DIRECTOR CONFIDENT

But the man ultimately responsible for the IRS year 2000 project, program director John Yost, said the agency will be able to process and collect taxes when the new millennium dawns.

"I know Art [Gross] is concerned, and there are legitimate reasons to be concerned," Yost said. But he said all software has been inventoried, 121 mission-critical applications have been identified and work has been scheduled for completion by January 1999. "We are making enormous progress, and I think that we will be ready and our systems will work," he said.

IRS year 2000 project

Full-time people: 700
Budget: $815 million
Number of mission-critical systems: 121
Number of applications: 90,000
Hardware: 80 mainframes, 2,000 minicomputers and servers and more than 100,000 PCs and laptops

The project is a massive one — complicated further by tax-code changes that require legacy software to be updated along with year 2000 work.

There are about 700 full-time people working on year 2000 issues at the IRS. The service also has hired about 150 contractors to help test systems deemed year 2000-compliant. "They are not finding significant problems," Yost said.

Yost said the IRS IT staff is well-suited for year 2000 work, which involves making technical changes to software. The agency does that fairly successfully each year when making changes based on new tax laws, he said. "The IRS has had problems when we've tried to take on very large projects that are brand new," he said. "I think [year 2000 work] is something we can handle." □

Report: Army battlefield IS plan has serious flaws

By Sharon Machlis

THE U.S. ARMY'S billion-dollar plan to automate battlefield information systems has run into serious software problems, a congressional investigative agency has concluded.

Recent testing showed that the system, under development since 1980, "is not operationally effective or suitable," said the U.S. General Accounting Office in an Oct. 16 report. Users complained that it was unstable, often locked up and needed to be rebooted.

And, message handling was inadequate, they said, with one server suffering a backlog of 19,000 messages in queue. One administrator said systems management functions critical to using the software were "immature, incomplete and lacked documentation."

The GAO called for a better development strategy for the Maneuver Control System (MCS), which is being designed to help commanders collect, display and send out information about battle plans, orders and enemy and friendly troops.

BEHIND SCHEDULE

Despite a reorganization aimed at correcting serious flaws, the MCS's latest operational test and evaluation has fallen 28 months behind schedule and is now slated for next March.

Meanwhile, the Army awarded a contract for newer MCS software versions but didn't allow time for full operational testing of each version before work on a new one gets under way, the GAO complained.

The Army has spent $765 million on the MCS project since 1980.

The U.S. Department of Defense generally concurred with GAO recommendations for the project, including not buying more hardware to run MCS operational systems until initial tests are successful.

However, the Defense Department said the GAO's criticisms didn't take into account improvements made to the system since tests last fall. □

Corporate turncoats & consulting trade-offs

AFTER WORKING a decade in corporate IS, consultant Ernie Torricelli says he'll never go back. But former IS consultant Darlene Nardher ultimately found her happiness in a permanent corporate job. Consulting and corporate IS are no longer clear-cut career choices. Many IS pros are now trying both to find the right lifestyle.

IT Careers, page 100

University sues over Internet term-paper sites

By Sharon Machlis

A UNIVERSITY lawsuit against Internet-based sellers of term papers once again raises a question that is cropping up across the 'net: Are World Wide Web-based businesses subject to the laws of every country, state and town where surfers connect?

"The courts are wrestling with this jurisdictional issue," said Stuart Smith, a partner at Gordon & Glickson, a law firm in Chicago. "Several cases have come down on opposite sides."

Boston University last week in federal court sued eight sites that provide the term papers, charging them with violating a law banning the sale of such papers in Massachusetts as well as federal antifraud statutes.

"We will take whatever steps are necessary to preserve the integrity of the academic process," university President Jon Westling said in a statement announcing the suit.

"We will take whatever steps are necessary to preserve the integrity of the academic process."
– Jon Westling, president Boston University

The university seeks an injunction against the companies, all located outside Massachusetts, and punitive damages.

"Somebody should be able to write papers on subjects that are good enough [that someone else] might find them of value."
– Stuart Smith, Gordon & Glickson

Some fear a successful suit could allow a state to stifle someone's First Amendment right to publish and sell on the Internet. "Somebody should be able to write papers on subjects that are good enough [that someone else] might find them of value," Smith said. "They should be allowed to say it or publish it and sell it."

One site being sued, Paperz.com, responded to the legal action: "Universities . . . have now come to stand for the restriction, if not elimination, of the publication of research done by member students."

Boston University spokesman Kevin Carleton said those papers aren't protected academic expression but are solely aimed at passing for a student's own work. "The claim that these are research material is bogus," he said. □

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Citicorp restructuring signals change in IS

By Robert L. Scheier

COMPETITION IS squeezing Citicorp. And in response, Citicorp is squeezing its IT operation.

Information technology and IT-dependent operations will be among the prime targets for 7,500 layoffs under a restructuring plan unveiled last week by the $20 billion global bank.

The restructuring at Citicorp — long considered a leader in the competitive use of IT — is seen as a sign that Citicorp Chairman John Reed wants to concentrate less on technology visions and more on cost-effective, focused use of technology.

Not only do IT and operations make up about half of Citicorp's approximately 90,000 employees, said Citicorp spokesman Jack Morris, but they are where Reed expects to find the greatest savings. Just as Citicorp has become the low-cost provider in credit-card processing by consolidating its operations, it now plans to repeat those savings by consolidating legacy applications and other functions.

DRAMATIC SHIFT

Banking analyst Art Gillis said the restructuring and the resignation this summer of senior technology officer Colin Crook are part of a broader strategy shift from visionary tinkering with technology and toward more cost-effective use of IT.

The bank last week announced it was taking an $889 million charge against third-quarter earnings "to standardize and consolidate our operations and technology platforms and improve our efficiency," Reed said. "Our customers demand that we continuously improve the ways we serve them, even at reduced prices."

Morris declined to name specific development efforts that might be consolidated or outsourced during the next year and a half. But even before the restructuring, the bank had announced it was consolidating an overseas bank card processing center into a branch bank operations center. In August, it also outsourced the manufacture of its next generation of automated teller machines to NCR Corp.

Morris said the restructuring wasn't related to the resignation this summer of Crook, which came amid speculation that Crook was being elbowed aside.

Morris said two executive vice presidents had been hired from outside the company to help with the restructuring. They are Mary Alice Taylor, an information systems veteran at Federal Express Corp., and Edward Horowitz, who came to Citicorp from Viacom, Inc.

"You're not going to see the high-tech professionals out in the street. You're going to see the grunt workers."
— Art Gillis, banking analyst

Crook "tended to be a tinkerer, a creator and an innovator," said Gillis, president of Computer Based Solutions, Inc., a Dallas-based consultancy.

But Reed now realizes that 80% of Citicorp's $2 billion annual IT budget goes to provide commodity services such as providing checking and savings account statements. He wants to focus on providing those as inexpensively as possible.

While Citicorp will continue to pursue technology visions, Gillis said, the 20% of IT spending going into such work "is not enough to keep a guy like Colin Crook excited." Crook couldn't be reached for comment.

Gillis predicted that most of the job cuts would come by closing Citicorp branches and eliminating back-office, low-end processing jobs that support those branches. "You're not going to see the high-tech professionals out in the street," he said. "You're going to see the grunt workers," such as computer operators and clerical workers.

DuWayne Peterson, former chief information officer at Merrill Lynch & Co., said the announcement was confusing because Citicorp had been consolidating for some time.

He said the restructuring was meant to send an especially strong message to the investment and analyst community that Citicorp is serious about cutting costs. □

Senior editor Julia King contributed to this report.

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Win NT 5.0 Beta 1 tries early testers' patience

By Laura DiDio

EASLY WINDOWS NT 5.0 users said they are finding the going rough with the initial beta of the operating system.

Nine Fortune 1,000 shops last week reported that they have experienced far more than the usual problems associated with beta software.

The testers detailed numerous problems with NT 5.0 Beta 1, including an inability to install the operating system, multiple "blue screens of death" crashes, poor technical documentation and much higher system requirements. Users and analysts said system upgrades for Windows NT 5.0 could cost from $300 to $600 per station.

"Microsoft must ensure that performance and stability are as good or better than prior versions"

Solving those problems generally required the users to spend hours to successfully load the Windows NT 5.0 Beta 1. Once it was loaded, several users said it was necessary to add more system memory and expand their hard disk space.

Mike Nash, Microsoft's director of marketing for Windows NT, said these are routine problems connected with Beta 1 code. "If this were happening in the Windows NT Beta 2 release, then I'd be concerned. Windows NT 5.0 is a major revision, so we expect a learning curve."

But instead of a curve, some users said they have found a slippery slope. "When I tried to upgrade from Windows NT 4.0 Service Pack 3 to the new Windows NT 5.0 Beta 1, the install hosed my entire Windows NT installation," said Mike Jayjock, manager of risk assessment at Rohm and Haas Co., a $4 billion Plexiglas manufacturer in Springhouse, Pa.

After Jayjock got the Windows NT 5.0 Beta 1 up and running on a Pentium Pro system outfitted with 96M bytes of RAM and a 3G-byte hard drive, "it choked again when I loaded my 'must have' applications," he said.

"I finally gave up, stripped it off my machine and reinstalled Windows NT 4.0. I'm very disappointed. I've installed many betas, and I don't expect them to be problem-free, but this is the most dysfunctional beta of the Windows NT operating system that I've experienced," he said.

BIG AND BLOATED

Other users complained that the Windows NT 5.0 Beta 1 release was slow and bloated and had much higher system requirements than the current Windows NT 4.0 version.

"You just cannot install the Windows NT 5.0 Beta 1 on a hard disk partition unless you have a minimum partition space of 286M bytes, and that's just to load it," said David Sheridan, chief technical instructor at TechTeach International, Inc., a Windows NT training center in Arlington, Va. Once Sheridan got the new beta installed, he said he added more memory and a bigger hard drive to accommodate general usage.

Sheridan also complained that the installation process included a "long, long, long, five-minutes-short-of-forever" file copy process — with pauses.

At first, he said, he had no idea whether the Windows NT 5.0 Beta 1 was still running. "Normally, Microsoft includes a line telling the user what operation the machine is performing," Sheridan said.

Matthew Merrick, vice president of information and technology at Merrick Printing Co. in Louisville, Ky., said despite how early it is in the Windows NT 5.0 development cycle, he hopes Microsoft will soon offer a unified installation program for all options, including the Internet Information Server (IIS). The IIS is part of the baseline operating system code.

"I'm excited by all the new features Microsoft is building into NT 5.0, but Microsoft must ensure that performance and stability are as good or better than prior versions," Merrick said. □

Tool lets users manage performance for mix of Unix and NT systems. Page 53

Windows NT 5.0 pitfalls

Among the biggest obstacles users have encountered so far in the Windows NT 5.0 Beta 1 are the following:

- **Extreme difficulty with the installation process.**
- **Problems getting two Windows NT 5.0 Beta 1 machines to communicate on the same network segment.**
- **Inclusion of two separate sets of administration tools in the beta — one for Windows NT 5.0 and one for NT 4.0 — with no integration capabilities.**
- **A manual disk defragmentation utility. Users who want automatic defragmentation capabilities still must buy third-party tools at an average cost of about $500.**
- **Changes in the way simple, routine tasks are performed — such as deleting files — could slow down some users. For example, instead of clicking the mouse button once to delete a file or a folder, users now must hover their cursor over the item to be deleted, wait for the mouse to highlight the item, then click to delete.**
- **Slow performance compared with the current Windows NT 4.0 release. For example, the Control Panel takes between three and four minutes to open because it is loading all graphic subsystem information. — Laura DiDio**

Clarifications

A page 1 story in the Oct. 13 issue included a photo of Ramesh Dorairaj and referred to a situation described by attorney Rajiv Khanna in which a foreign-born information systems worker abruptly quits his job to take a better-paying position, leaving his first employer stuck for the money it spent processing a visa and working papers. But Dorairaj, whose story is continued on page 112, is not the worker being referred to by Khanna. This was an unfortunate placement of the photo of Dorairaj, who left his previous employer on good terms before joining his current company to acquire broader IS experience.

On page 8 in the Sept. 29 issue, a news short about Pitney Bowes, Inc. licensing cryptographic technology omitted the company that makes it. It is Certicom Corp. in Mississauga, Ontario.

IBM preps aggressive RS/6000 Web server bundle

▸ *Also merges RS/6000 and AS/400 divisions*

By Tim Ouellette

ISM LAST WEEK unveiled twin efforts to pump up its midrange servers.

IBM aimed the low-end RS/6000 squarely at World Wide Web serving and quietly merged the AS/400 and RS/6000 units.

Another quarter of sluggish sales of its low-end RS/6000 servers has IBM preparing an aggressive Web server bundle in hopes of turning the tide.

For starters, the company slashed the price of its entry-level RS/6000 Web servers from $9,000 to less than $5,000. It also announced that the RS/6000 43P Model 140, a 200-MHz system, will be bundled with Lotus Development Corp.'s Go Web Server, Netscape Communications Corp.'s Fastrack Web Server, a Java compiler and IBM's AIX 4.3 Unix operating system.

Sales of high-end systems such as the RS/6000 SP line have been strong, but the low end has foundered in the face of strong competition from

Windows NT and rival Unix systems.

COMEBACK PLAN

IBM sees the Web server business as a way to get its foot back in the door by combining a low-priced entry point with the RS/6000's reliability and smooth scalability path.

For example, Unix scalability was a key requirement for Recreational Equipment, Inc. (REI) and led to its choice of a Unix Web server over Windows NT.

ROOM TO GROW

"We had no idea how big or small this [Web server project] was going to be," said Kim Muramoda, technical services manager at REI. "So we wanted to start small and make sure we could still scale to the high end."

The Kent, Wash., outdoor sports retailer uses RS/6000 43P servers to handle firewall and Web staging duties and upgraded to a larger RS/6000 for the actual Web server.

For situations such as that, IBM sells optional Interactive Network Dispatcher software, a $1,500 license that manages clusters of RS/6000 Web servers.

IBM also is offering a new 43P Model 140 with a 332-MHz processor. That system will start at $9,995.

TWO BECOME ONE

Simultaneously, in a bid to punch some life into its flagging midrange server business, IBM quietly merged its AS/400 and RS/6000 divisions.

Although the two products will remain independent, users could see more focused marketing of one server or another to specific uses and a sales force that specializes in both platforms.

Both divisions have suffered slow sales in recent quarters, although it is true that in the past quarter both platforms have gone through a product transition.

The groups had recently already begun sharing manufacturing facilities and processors (CW, Oct. 13). □

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FRANKLY SPEAKING

And Justice for all

FRANK HAYES

So now Microsoft has truly nailed down its position as the IBM of the '90s. It's got an industry in its grasp — and the Justice Department breathing down its neck.

That's trouble for Microsoft, but it's good news for IS.

Of course, Microsoft has other troubles.

Sun keeps piling on charges in its lawsuit: It's now demanding that Microsoft pull Internet Explorer off the market and pay $35 million for violating a nondisclosure agreement. Several state attorneys general are lining up to take shots at Microsoft, and so is Ralph Nader (see stories, pages 1 and 121).

Customers aren't upgrading the way they're supposed to. More corporate users still have old Microsoft operating systems, such as DOS and Windows 3.1, on their desktops than have Windows 95 or Windows NT. Half the corporate copies of Office 97 haven't been installed as businesses cut back on software thrash.

And now the Justice Department says Microsoft violated its 1995 consent decree by forcing Internet Explorer on PC vendors. It wants to hammer Microsoft with a $1 million-per-day fine.

The real problem isn't the fine, though. It's that Microsoft's worst fears have come true. That consent decree, which Microsoft hoped would merely make the Justice Department go away in 1995, really does mean that Justice will be on Microsoft's back just about forever.

Now's the time to push Microsoft hard for everything you want from a vendor.

IBM — the IBM of the 1960s, '70s and '80s — found out about consent decrees the hard way. When the Justice Department's antitrust division went after IBM decades ago, it sent a chill through the whole organization. After that, every action had to be measured against existing consent decrees and the possibility of future antitrust action. Which is why IBM didn't go after alleged patent infringement in its competitors' PCs or buy up Microsoft when it had the chance. Those actions could have been seen as anticompetitive, and IBM might have felt the heavy hand of Justice again.

So what kind of chill is Microsoft, the new IBM, feeling just now? The Justice Department wants to tell Microsoft how it can combine its products. What nondisclosure terms it can put in its software licenses. What Microsoft must explicitly tell its customers about removing Microsoft products from their PCs and installing competing products.

Now *that's* the heavy hand of Justice.

But Microsoft's pain is your gain — or at least it can be, if you're willing to start pushing Microsoft hard for everything you want from a vendor.

You want lower prices? It's bargaining time, folks. Cheaper support or custom bundles? Ask for 'em. Better licensing terms? Put it all on the table. You won't get everything you want, but now's the time to make demands.

See, Microsoft's business, and the way it *does* business, are under attack. And right now, a lot of Microsoft competitors just got a lot more motivated. Seeing the chance that Microsoft might have to drag around Justice investigators wherever it goes, vendors such as Lotus, Corel and Netscape will take advantage of their own flexibility. They'll offer you better deals than ever before. And Microsoft, which can't afford to arm-twist its customers where the investigators might see, will have to offer better deals of its own to compete.

That creates opportunity for anyone who makes decisions about information technology in large organizations. Like Microsoft's products? You'll get a better deal. Hate Microsoft and want to bail? You'll still get a better deal, whether you end up buying from Microsoft or someone else.

Look at it this way: *Your* money made Microsoft the biggest, richest software company in the world. You're just getting a bit of it back. That's really only justice.

And when it comes to Microsoft, it turns out there is Justice after all. □

Hayes (frank_hayes@cw.com) is Computerworld's staff columnist.

SHORTS

Intel/Digital hearing delayed

A federal court postponed a scheduled hearing on patent lawsuits between Intel Corp. and Digital Equipment Corp. The hearing on Intel's lawsuit is now set for Oct. 30, an Intel spokesman said. Intel officials said the full court schedule delayed the hearing, but observers have suggested that the delay could mean the two companies are close to negotiating a settlement. Digital sued Intel in May, alleging chip technology patent infringement. Officials at Digital declined to comment.

Novell issues year 2000 patch

Novell, Inc. last week released an automatic client update patch it claims will resolve any year 2000 bugs in its 32-bit clients for DOS/Windows, Windows 3.x, Windows 95 and Windows NT Workstation systems. Novell said final versions of the beta patches (available for free at *www.novell.com/p2000*) will be out by year's end. Officials at the Provo, Utah., company said the beta patches were designed to help customers start their own year 2000 testing. Officials said the patch shouldn't be deployed in networks until the final versions are released.

NEC to unveil crypto code

NEC Corp. said it has developed an encryption technology that can confuse would-be hackers. The technology, which will be formally presented in January at a symposium in Shizuoka, Japan, creates several false decryption keys if someone attempts to decipher coded arrays within the correct key. NEC, whose U.S. headquarters is in New York, also announced a cryptography evaluation system that creates a three-dimensional graphical representation of an encrypted algorithm based on statistical analysis.

Bellcore offers year 2000 test

Bellcore in Morristown, N.J., on Nov. 3 will announce a new technology and consulting service that automates year 2000 testing of systems and networks. The new Year2000TGF technology incorporates testing dates into a user company's regression test cases, which users can download to Bellcore and monitor via a World Wide Web-based program. Bellcore officials expect the automated testing to significantly decrease year 2000 testing costs. Testing typically accounts for more than half of all year 2000 costs, according to Gartner Group, Inc., in Stamford, Conn.

Sun shoots new Photon storage

Sun Microsystems, Inc. in Mountain View, Calif., this week will announce its latest Fibre Channel disk subsystem, previously called Photon. The Enterprise Network Array A5000 will support Solaris servers and can store up to 500M bytes of data. Sun officials claim the array can transmit data at speeds of up to 190M byte/sec. — partly due to the inclusion of Fibre Channel disk drives from Seagate Technology, Inc. Pricing starts at $35,000.

Unicenter sales drive CA

Computer Associates International, Inc. reported revenue of more than $1.1 billion for its second fiscal quarter, a 13% increase despite a $30 million drain from foreign currency exchanges. Its net income was $271.8 million, a 22% rise over the same quarter last year. CA officials credited the results on sales of its Unicenter TNG management suite and said two big information systems shops — The Sabre Group in Fort Worth, Texas, and consulting firm Cap Gemini in Stockholm — had adopted it.

WorldCom goes shopping

WorldCom, Inc. in Jackson, Miss., last week continued a campaign to increase its Internet service provider holdings. WorldCom's Internet subsidiary, Fairfax, Va.-based UUNet Technologies, Inc., bought a French Internet service provider, Internet-Way SA in Neuilly-sur-Seine. Internet-Way, France's third-largest Internet provider, will change its name to UUNet France. Terms of the deal weren't disclosed.

SHORT TAKES Atlanta-based **Harbinger Corp.**, a maker of electronic data interchange (EDI) and electronic-commerce services, acquired Concord, Calif.-based EDI vendor **Premenos Corp.** in a deal worth $200 million. ... **Lotus Development Corp.** in Cambridge, Mass., has shipped CC:Mail Version 8.1, an upgrade of its electronic-mail system that has improved Internet hooks. It costs $55 per user. ... Westboro, Mass.-based **Banyan Systems, Inc.** last week posted net profits of $769,000 on revenue of $18.8 million, its first profitable quarter since mid-1996. ... Supply-chain software maker **i2 Technologies, Inc.** in Irving, Texas, posted third-quarter profits of $4.2 million on $54.9 million in revenue. The company's revenue rose 129%. ... Enterprise resource planning software vendor **The Baan Co.** posted quarterly profits of $18.3 million on revenue of $173.2 million, nearly twice its income for the same quarter a year ago.

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Users say LANDesk cuts costs, aids support

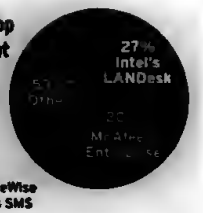
By April Jacobs

USERS SAID THE latest version of Intel Corp.'s LANDesk management suite, due this week, goes a long way toward helping to control desktop support and management costs.

And that puts the Santa Clara, Calif., company, which is best known as the leading chip maker, in a good position to stay on top of a desktop administration software market that grew 125% last year to $487 million, according International Data Corp. (IDC) in Framingham, Mass.

For example, at Federated Mutual Insurance Co. in Owatonna, Minn., which has 3,500 end users, network manager Robert Veriede said a recent switch to Microsoft Corp.'s Windows NT Workstation from IBM's OS/2 required new desktop management software. Veriede said NT also allows for more remote control and administration of desktops — something the company was eager to take advantage of to help keep support costs down.

"LANDesk was the only package that met our criteria of being able to scale across WAN links, manage NT 4.0 desktops and provide electronic delivery of software across the network," Veriede said.


1996 desktop management software
27% Intel's LANDesk
* Includes Symantec's desktop administrator, Novell's ManageWise and Microsoft's SMS

Source: International Data Corp., Framingham, Mass.

"We want to lower our cost of ownership like everyone else, and we want to be able to do that with tools that work best in a Windows environment," he added.

Older hardware can present some problems in terms of management because it doesn't allow for complex remote tasks such as remote wake-up. But Veriede's desktops are relatively new and can run NT Workstation [CW, Oct. 20].

NEW FEATURES

Key LANDesk 6.0 features include allowing administrators to perform tasks such as remotely replicating a user's desktop to troubleshoot it, delivering applications and operating system upgrades remotely, waking up a machine to service it remotely and checking for hardware problems such as driver incompatibilities or even beat issues.

Dave Taylor, technology director at the Florida Department of Health's Daytona Beach division, said the agency has 10,000 users. Many are likely to adopt LANDesk, following the path Taylor's group has already taken.

MONEY SAVER

"Our help desk can field problems by remote controlling a user's desktop, which saves us a lot of money because we don't have to send technicians out," Taylor said. The division, which has about 400 end users, also uses LANDesk to detect viruses and keep track of inventory — a key part of asset management.

The LANDesk management suite is available Oct. 29. Pricing is based on the number of licenses purchased. For example, a 1,000-node license is available at $50 per node, and a 100-node license is priced at $62.50 per node.

Rick Villars, an analyst at IDC, said users should plan to spend at least as much on set-up costs as licensing costs because of the complex nature of implementing management software. □

& Hewlett-Packard readies eight-way Intel-based server for NT. Page 61

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MICRON

THINKING OUT OF THE BOX™

Bay fills out its Internet Protocol arsenal

▸ *Vendor adds IP directory plan, router software*

By Bob Wallace

FOR BAY NETWORKS users, it's the IP way or the highway.

The Santa Clara, Calif., vendor last week bolstered its Internet Protocol lineup with a directory services plan, new router software and a deal to provide virtual private network (VPN) building blocks.

Those offerings flesh out Bay Networks, Inc.'s Adaptive Networking strategy, which was announced in May. It was designed to help users migrate to IP corporate networks and to control expansion of current IP networks.

Earl Perkins, manager of network projects at Entergy Corp., a utility in New Orleans and a Bay shop, said he approves of Bay's latest strategy.

"Bay's assuming users are continuing to build IP networks and are [eliminating] other protocols," he said. "Bay's building its future on this premise and helping users optimize IP services to make IP the way to go."

Toward that end, Bay has announced NetID, a package that lets network administrators use a directory to create network usage rules, or policies, for users.

NETWORK STRATEGIES

NetID is a PC- or Unix-based server and software bundle that manages IP addresses, domain-name service and Dynamic Host Configuration Protocol.

Bay also joined a directory services initiative — led by Microsoft Corp., Cisco Systems, Inc. and 3Com Corp. — that endeavors to integrate directory services and networks.

"That [directory integration] would be wonderful for us because we need to know where our employees are and how to reach those at our sister companies," said Jim Kunzman, director of communications services at Nielsen Media Research in Dunedin, Fla.

With an open, interoperable directory services system, Kunzman said he could look up an employee at one of his sister companies and be presented with the person's IP and electronic-mail addresses, and telephone and fax numbers.

Bay's new router software, BayRS Version 12.0, supports new IP features such as Network Address Translation (NAT) and IP Version 6 (IPv6).

NAT allows users with private IP networks who use nonregistered IP addresses to access the Internet. IPv6 provides more registered addresses.

The software also supports levels of service, which use prioritization to allocate resources to users and applications.

Bay also signed an agreement to resell VPN products from VPNet Technologies, Inc. in San Jose, Calif.

The Bay VPN Series 500 family comprises two stand-alone VPN boxes, client software and a management package. Bay will ship the products next month.

VPNs are virtual networks that share capacity over the Internet.

Analysts said Bay needs IP services to compete for large customers.

"Bay needs this pitch to compete with the big players for new and existing customers," said Craig Johnson, an analyst at Current Analysis, Inc. in Ashburn, Va. "Otherwise, they're left competing in the speeds-and-feeds area where there's little differentiation." □

BAY'S IP STRATEGY

- Joins industry initiative for directory-enabled networks
- Debuts router software with network address translation and IPv6 support
- Signs VPN product resale deal with VPNet Technologies
- Fortifies network security
- Enhances mainframe networking

Cisco plots voice/data integration

By Bob Wallace

CISCO SYSTEMS, INC. users eventually will be able to cut wide-area network costs by integrating voice and data traffic on one enterprise network.

The vendor last week detailed a long-term strategy that lets users send voice over Internet Protocol, frame-relay or Asynchronous Transfer Mode (ATM) links. "They're smart in covering all the bases and not forcing users down any one path for all their voice needs," said Jay Pultz, an analyst at Gartner Group, Inc. in Stamford, Conn. "All three have a role in today's enterprise. It's up to the user to determine that role."

Other internetworking vendors have pieces, but not the entire product line, analysts said.

Large users have pressed Cisco for a comprehensive voice/data/video integration strategy, said Byron Henderson, Cisco's director of voice strategy and market development.

"We wanted a strategy that didn't force users to pick any particular technology," he said.

According to the roultiphase plan, Cisco plans to provide voice-switching modules for its 3600 remote access server and voice-over-ATM support for its Catalyst 5500 data center switch.

The voice modules will support 8-to-1 voice compression, which allows devices to send voice over packet or cell-based networks.

The ATM circuit emulation enables a device to send voice over ATM links — for its data center Catalyst 5500 LAN switch — and over its 7200 series high-end routers. Over the next several years, additional products will let users mix in video.

QUALITY ISSUES

Voice traffic that doesn't require high quality is a candidate for transmission over IP, while users who can pay more for better quality can send it over frame-relay links, said Tom Nolle, president of CIMI Corp., a consultancy in Voorhees, N.J. Voice that needs optimum quality and dedicated bandwidth can use ATM, he said.

Users can save by running voice over existing data lines rather than buying separate connections for the delay-sensitive traffic. Savings vary by region.

For example, "users can reap benefits by running voice over frame relay internationally, as voice rates are far higher outside the U.S.," said George Deyett, telecommunications operations manager at Polaroid Corp. in Waltham, Mass. "The savings pay for the cost of the equipment you need in a matter of months."

Polaroid uses a 20-country worldwide frame-relay network. "Users can save if they can squeeze a little extra traffic on their frame networks or add some frame capacity and use it for voice calls," Deyett said.

After the equipment is paid for, users can save 30% to 40% per month outside the U.S. by running voice over frame relay, Deyett said.

Payoffs are longer here as long-distance rates are far lower in the U.S. That means integration of voice and data in the U.S. will take longer, analysts said.

"Cisco has thought its strategy through and come up with as many viable alternatives as possible," said Maralyn Rosenblatt, vice president of client services at Countrywide Home Loans in Simi Valley, Calif. "That lets me match the traffic with the most cost-effective transport alternative." □

Dell recalls faulty adapters in Latitude LM notebook line

By Kim Girard

DELL COMPUTER CORP. is recalling 233,000 faulty AC adapters shipped with Latitude LM notebook PCs and Latitude LM port replicators.

The U.S. Consumer Product Safety Commission ordered the recall, claiming that the connector pins on the adapters are liable to break and pose a shock hazard. The Round Rock, Texas-based computer maker has received 111 reports of the connector pins breaking off. No injuries have been reported.

The black AC adapters, which are 4-in. long and 2.25-in. wide, were shipped between June 1996 and October 1997.

The adapters can be identified by the first eight digits of the bar code, 00097689 or 00099500, located on the bottom of the adapter. Only certain 00099500 adapters are being recalled — ones with A00, A01, A02 or A03 at the far right of the bar code.

Dell will provide a free replacement to buyers of the faulty adapters. The Latitude LM notebooks and port replicators aren't being recalled.

For more information, the company can be reached at (800) 715-1483 between 8:30 a.m. and 8 p.m., Monday through Friday. □

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Groupware put to test

▸ *Accounting firm mergers create new niche for collaborative technology*

By Barb Cole-Gomolski

GROUPWARE, which is supposed to make it easier for people to collaborate, is about to be put to the test as some of its biggest proponents get set to merge.

The recent wave of proposed mergers among the Big Six accounting firms involves some of the heaviest users of groupware.

On Sept. 18, Coopers & Lybrand LLP and Price Waterhouse LLP announced plans to combine practices. Ernst & Young LLP and KPMG Peat Marwick LLP unveiled their merger pact last week.

BENEFITS AHEAD

Analysts predict that the merging firms will benefit from their heavy investments in groupware and a specialized application called knowledge management, in which workers' know-how is tracked in a shared database.

"Companies that have groupware find it easier to merge because they have a [corporate] culture that is committed to sharing information," said Melanie Hills, president of Knowledgies, a Plano, Texas, groupware consultancy.

Specifically, the use of knowledge management applications means companies aren't as dependent on specific people. Corporate knowledge is stored up for everyone to view, Hills said.

Knowledge management applications also could come in handy as the companies try to develop new "best practices" for the combined entities, according to Carl Frappaolo, vice president of Delphi Consulting Group in Boston. "They can use the knowledge-management application to determine what each firm haa done in the past," he said.

Analysts predict that the merging firms will benefit from their heavy investment in groupware.

In the absence of a system where such experiences are documented and readily available, "it would be very difficult to create a aingle corporate culture," Frappaolo said.

All the firms have invested big money to build shared databases that document the firms' practices, track subject-matter experts and record the experiences of consultants. Those systems were designed to harness the collective knowledge of the firm and make that information available to anyone in the firm.

Most of the firms involved — except for KPMG — have centered their knowledge-management efforts on Lotus Development Corp.'s Notes software.

KPMG originally built its Knowledge Manager application using First Class, a messaging product from Markham, Ontario-based SoftArc, Inc. But last August, KPMG announced plans to migrate to Microsoft Corp.'s Exchange.

KPMG wouldn't comment on whether it would continue with its plan to go to Exchange or adopt Ernst & Young's Notes system.

As for Coopers & Lybrand and Price Waterhouse, those firms also declined to provide specifics on how they might meld their Notes-based knowledge management systems. However, a spokesman for Coopers & Lybrand said the firms have already benefited from being on the same electronic-mail platform, because they can easily send mail and attachments to each other. □

MERGING COMPANIES' GROUPWARE

Company	Groupware plans
Coopers & Lybrand	Uses Notes for messaging and a Domino-based intranet for sharing knowledge
Ernst & Young	Consolidated on Notes for messaging and groupware last year
KPMG Peat Marwick	Announced plans to migrate to Microsoft Exchange for messaging and groupware last August
Price Waterhouse	Uses Notes for messaging, groupware and sharing knowledge

Mergers may mean less choice at higher cost

By Jaikumar Vijayan

THE WAVE OF mergers among big consulting firms — such as last week's proposed combination of Ernst & Young LLP and KPMG Peat Marwick LLP — could mean less choice for users and possibly more expensive services.

"Unfortunately, I have yet to become comfortable that there is a business value in all this for me," said David Pensak, corporate adviser for computer technology at Du Pont Co. in Wilmington, Del.

"These guys are already so big we can get anything we want from them anyway. All [that] these mergers are going to do is give them less incentive to compete on price," Pensak said.

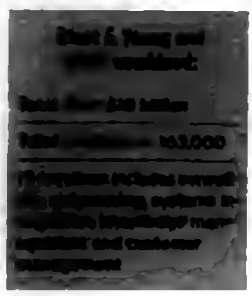
ONE-STOP SHOPPING

On the other hand, the wave of mergers that is turning the Big Six accounting firms into the Big Four could result in corporations getting more one-stop shopping for technology services.

If the Ernst & Young/KPMG marriage is approved by partners from both companies, the combined entity — with total fees of more than $16 billion and more than 163,000 employees — will be No. 1 in the professional services industry.

The plan comes on the heels of a similar announcement last month between Price Waterhouse LLP and Coopers & Lybrand LLP.

Both Ernst & Young and KPMG are considered atrong in the market for implementing client/server packaged software and enterprise resource planning systems from vendors such as SAP AG and The Baan Co.



But each company also has separate strengths: KPMG in electronic commerce, for instance, and Ernst & Young in customer information systems and knowledge management.

MORE SERVICES

The merger would allow the combined entity to offer a wider portfolio of services, people and market reach, according to Stan Lepeak, an analyst at Meta Group, Inc. in Stamford, Conn.

The lure of getting most information technology services from one consulting firm will prove powerful for some large corporations, Lepeak said.

"In an ideal world, customers would like to do best-of-breed shopping for their IT services," he said. "But practically speaking, many tend to gravitate toward one-stop shopping" because it costs less to manage than a multivendor arrangement, Lepeak said. □

Year 2000 'guarantee' no panacea for users

By Robert L. Scheier

AS THE DEADLINE to fix year 2000 software bugs draws closer, a four-week guarantee to renovate mainframe code sounds pretty good.

But make sure you realize exactly what is being guaraoteed, cautioned both a year 2000 project manager and a consultant last week.

Cap Gemini America last week said it will "guarantee 100% year 2000 renovations to spec in four weeks" and will either fix any defects for free or give the customer a refund.

SATISFACTION GUARANTEED

The warranty "reflects the proven quality of our renovation tools and techniques," said Jim Woodward, senior vice president and head of Cap Gemini's TransMillennium Services Group in New York.

However, the warranty applies only to the actual code repair, which most observers say makes up at most 20% of an overall year 2000 effort. The customer, or a vendor, still has to assess all the company's software, decide which is most critical to fix, test the fixed code and put it back into production.

"They're offering you the middle piece" of the overall process, said Lauris Nance, vice president and year 2000 project executive at Equifax, Inc. in Atlanta. "It doesn't meao that in four weeks they're going to reinstall your code, unless you're akipping the testing process."

Nance was more impressed with the fact that Cap Gemini is selling code repair as a standalone service rather than requiring customers to also purchase assessment or other services to get accesa to the vendor's repair facilities.

The guarantee also applies only to Cobol code running under MVS, in batches of 750,000 to 1.5 million lines of code, that Cap Gemini and the client have identified to fix through a joint project specification.

The warranty "reflects the proven quality of our renovation tools and techniques."
– Jim Woodward, Cap Gemini America

Although such mainframe Cobol code accounts for the bulk of known year 2000 problems, the guarantee doesn't apply to other legacy systems or even newer client/server applications, which also must be carefully checked for bugs.

"It's really no great shakes," said Gartner Group, Inc. analyst Lou Marcoccio. "They do a pretty good job in their [renovation] factory when you've got plain-vanilla Cobol and you're not doing anything other than remediating. That's not what most of the world needs to do most of the time." □

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ANTITRUST INVESTIGATION

Survey: Users back DOJ on separate browser, OS

CONTINUED FROM PAGE 1

pact their purchasing decisions.

"The business has got to move on," said Allan Ditchfield, chief information officer at Progressive Insurance in Mayfield Village, Ohio. "If we waited for the Justice Department, that could stop us for years. It's just not a reality."

Microsoft denies the Justice Department's charge that it is abusing its monopoly power in violation of a 1995 consent decree. It argues that the Internet Explorer browser is merely a tightly integrated feature of Windows 95.

Microsoft CEO Bill Gates last week said his company puts into the operating system "the things that a super-high percentage of our customers want."

But the Windows 95 customers *Computerworld* polled held a different opinion. Sixty-three percent said they didn't want their World Wide Web browsers integrated with the operating system, and only 32% said they did.

By an even greater margin — 79% to 19% — users agreed with the Justice Department that a Web browser is a distinct and separate entity from the operating system.

That distinction is a key piece of the Justice Department's case, because the consent decree doesn't prevent Microsoft from developing integrated products.

In a CW survey, 68% of respondents said the Justice Department should be involved in this issue.

"If the government doesn't stop the integration of the browser with Windows 98, then it hasn't really done anything," said James Love, director of Ralph Nader's Consumer Project on Technology.

The Justice Department was reluctant to predict its response to Windows 98, given that the product hasn't shipped yet.

But if the Web browser is truly integrated with the Windows 98 operating system, Microsoft may be on solid legal ground as far as the consent decree goes, according to an antitrust attorney who has followed the case. And legal tools may be insufficient to address the issue further.

"There's a real concern about whether the courts and government agencies are well-equipped to second-guess product design and engineering issues," he said. "At some point, the law seems to say, 'Look, we know there might be competitive harm, but there's just nothing we can do about it.'"

Many users, however, said they want to see browser choice preserved with Windows 98.

"I'd like the option to use other browsers," said Joel Conrad, CIO at The Liberty Corp. in Greenville, S.C. "We're happy with Internet Explorer, but if there's a better browser, we'd like to use it."

Conrad said he can't see any advantages to bundling the browser with the operating system, and he said he believes users should be able to remove the Internet Explorer icon from their desktops if they select another browser.

DIFFERENT VIEW

Others feel differently. "I don't feel Microsoft is ramming [Internet Explorer] down my throat," said Adam Phillips, manager of network services at Novacare, Inc. in King of Prussia, Pa., a $1 billion provider of rehabilitation services. "It's there if I want to use it, but I don't feel any pressure to use it."

However, the Justice Department produced evidence that hardware vendors have felt some pressure.

Microsoft notified Compaq Computer Corp. that its Windows 95 license would be terminated if Compaq removed the Internet Explorer and The Microsoft Network icons from Windows 95 desktops.

Compaq had considered removing the Internet Explorer icon because it wanted to give that position to its browser partner, Netscape Communications Corp., according to testimony from Stephen Decker, Compaq's director of software procurement. □

Senior writer April Jacobs contributed to this story.

Since users don't see browsers and operating systems as one product ...

Do you agree with the Justice Department that a Web browser and an operating system are separate software products?

... they'd like to keep them separate ...

Do you want your Web browser integrated with the operating system?

... and they prefer Navigator over Explorer

Given a choice of browsers, would you select Internet Explorer 4.0 or Navigator 4.0?

Base: 100 Windows 95 users

Source: Computerworld Information Management Group, Framingham, Mass.

"The definition of operating systems goes back almost 35 years now, and it seems rather obvious that there are some things that belong in an operating system and some things that don't."

JIM BARKSDALE
CEO, NETSCAPE COMMUNICATIONS CORP.

"I think the cat's out of the bag now. [The Justice Department is] going to have to deal with the predatory pricing issue. They're going to have to deal with Windows 98."

RALPH NADER
CONSUMER ACTIVIST

"Clearly, by forcing businesses to install Internet Explorer 4.0, Microsoft is trying to corner the browser market. The Justice Department is right to pursue Microsoft."

LEONARD STEINBACH
IT DIRECTOR, SOLOMON R. GUGGENHEIM MUSEUM

"We like the idea that we get [the browser] for free. We like the way Windows 98 is going to work, where everything looks like the browser."

EDWARD BIANCO
CIO, LOWELL GENERAL HOSPITAL

GroupWise users say: Look Ma, no webmaster

By Barb Cole-Gomolski

NOVELL, INC. last week shipped an add-on product for its GroupWise messaging system that company officials said will let users take better advantage of the World Wide Web.

GroupWise Web Publisher is a HyperText Markup Language (HTML) conversion tool that allows GroupWise users to publish to the Web any document they produce. Documents are stored in GroupWise's library and are published to the Web when they are requested by a user via a search or specific uniform resource locator.

The software lets users update information on the Internet or across a corporate intranet without involving a webmaster, which could reduce administrative costs. It also will let users import data from other applications into GroupWise and publish that information to the Web.

"The [content] on our intranet is updated several times a day," said Ken Ainge, information systems manager at KTVX in Salt Lake City, which has standardized on GroupWise. Today, end users save changes in the television station's programming schedules to a directory and a webmaster edits the HTML code before posting the changes to the company's intranet. GroupWise Web Publisher "would allow users to update their own [content]," Ainge said.

GROUPWISE WEB PUBLISHER

Pros

- Allows GroupWise users to publish documents directly to the Web or a corporate intranet
- Handles version control
- Determines if users have read or write access to documents

Cons

- Requires users to store documents in GroupWise
- Runs only on Windows NT servers

James Higley, network operations engineer at The Allegro Group, a systems integration firm in Dayton, Ohio, said instead of faxing documentation to clients, he will publish the material using GroupWise Web Publisher and grant customers access to view the information. In the process, he will avoid the task of converting his documents into HTML because GroupWise Web Publisher handles that automatically.

KEY TO COMPETITION

Analysts said GroupWise Web Publisher, which is about five months late, will be key in Novell's attempt to stay competitive with messaging rivals Lotus Development Corp. and Microsoft Corp. Lotus recently shipped an application for its Domino server, dubbed Domino.doc, that is similar to the new GroupWise add-on. Oracle Corp.'s InterOffice also has built-in Web-enabled document management.

Although GroupWise Web Publisher could keep Novell on equal footing with its competitors, it probably won't be enough to attract users away from other messaging systems, said Tim Sloane, an analyst at Aberdeen Group, Inc. in Boston. "It will appeal to companies that have already bought in to GroupWise," he said.

Web Publisher will be free on Novell's Web site for existing and new GroupWise customers until April. Future pricing hasn't been determined. Web Publisher now runs only on Windows NT server, but an IntranetWare version is expected next year. □

New Web-based tools help engineers share graphical documents. Page 41

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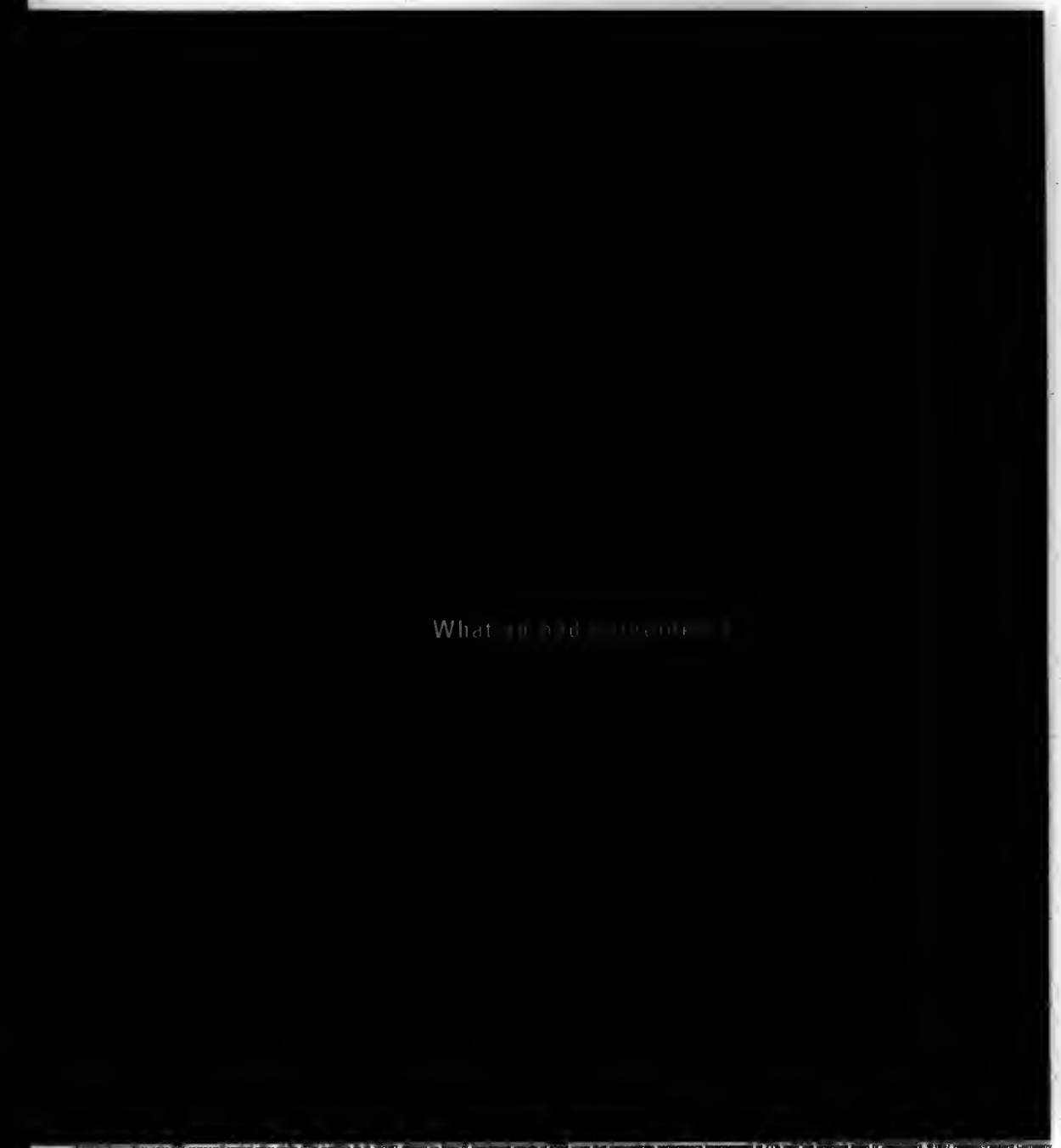

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NCR cuts cost of starter warehouse pack in half

By Craig Stedman

FACED WITH heavy competition from cut-rate data marts, NCR Corp. is chopping almost in half the base price of a starter data warehouse package built around its Teradata database.

The cut from $800,000 to $450,000 is expected to be announced this week. It raises the ante in the Dayton, Ohio, company's effort to make Teradata less frightening to users who aren't building the huge data warehouses the NCR software is best known for handling.

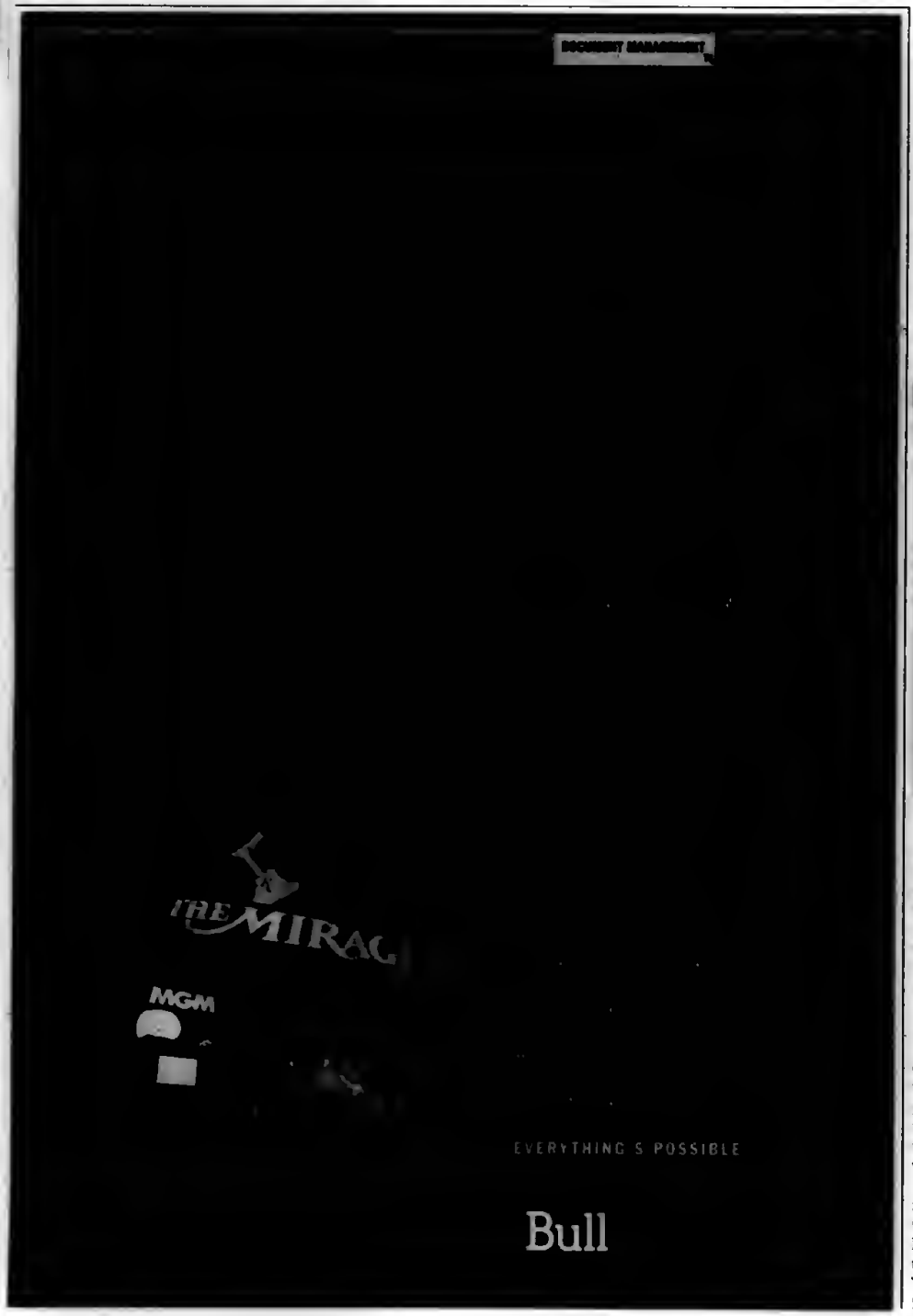
For example, Continental Airlines, Inc. initially was drawn to other databases with less daunting pricing when it shopped for a data warehousing setup late last year. Teradata "seemed at face value to be more expensive," said Bob Edwards, senior director of advanced technology at the Houston-based airline.

But Continental was won over after Teradata easily topped its performance benchmarks. "It doesn't matter where you start [on price] if you can't scale up," Edwards said. "If a user submits a query and it takes two hours to get an answer back, I'm hosed."

Continental bought Teradata as part of NCR's RightStart warehousing bundle and began pilot use of a 300G-byte database in August. The technology initially is being used to analyze travel patterns so revenue planners can better forecast ticket sales on individual flights.

Micro Enhancement International, Inc. in Spokane, Wash., worked a RightStart deal with NCR to omit the Teradata database but still purchase the hardware and consulting services in the bundle.

Micro Enhancement, which develops software for grocery stores, currently uses an Informix Software, Inc. database. Buying Teradata for a new data warehouse that collects point-of-sale records from stores would have required "a tremendous investment, especially when we were just trying to get our feet wet," said Gary Pellham, the company's director of project management.



START HERE

Components in NCR's RightStart package:

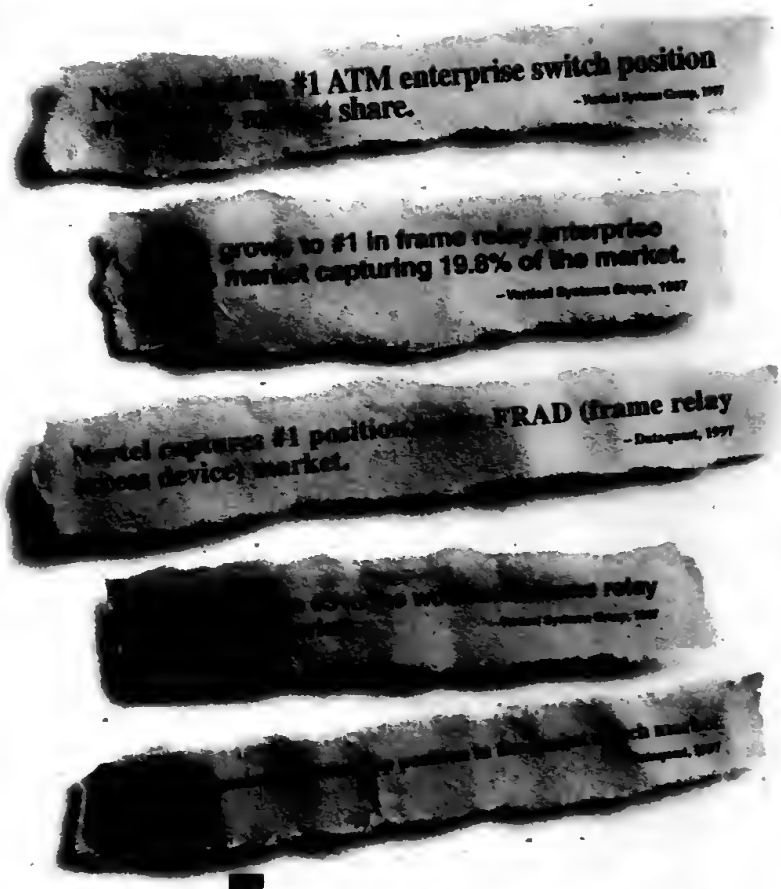
- WorldMark 4700 Unix server with four Pentium Pro processors
- Teradata decision-support database
- Consulting services that target 90-day projects
- Data extraction, transformation and loading tools
- Add-on retail, financial and communications applications

To many users, RightStart's $800,000 starting price has looked increasingly steep as Oracle Corp. and other vendors have begun offering $100,000-or-less data mart packages.

"NCR needs to come more downmarket," said Robert Craig, an analyst at Hurwitz Group, Inc. in Framingham, Mass. "Their product set is just too rich."

NCR officials said the entry-level RightStart bundle is being cut to $450,000 for a 50G-byte project. The reduction is coming through a combination of lower-cost hardware, more aggressive consulting bids and earlier cuts in Teradata pricing. NCR also is adding three new RightStart packages tailored to vertical markets, starting at $500,000.

The bundles include fixed-fee consulting services that cover the whole spectrum of building an initial data warehouse, from project management through planning and physical design. Those services account for about $200,000 of the base price, NCR said. □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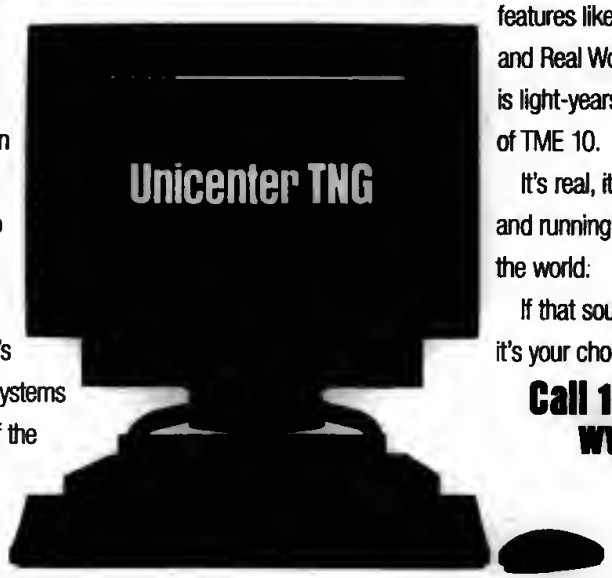

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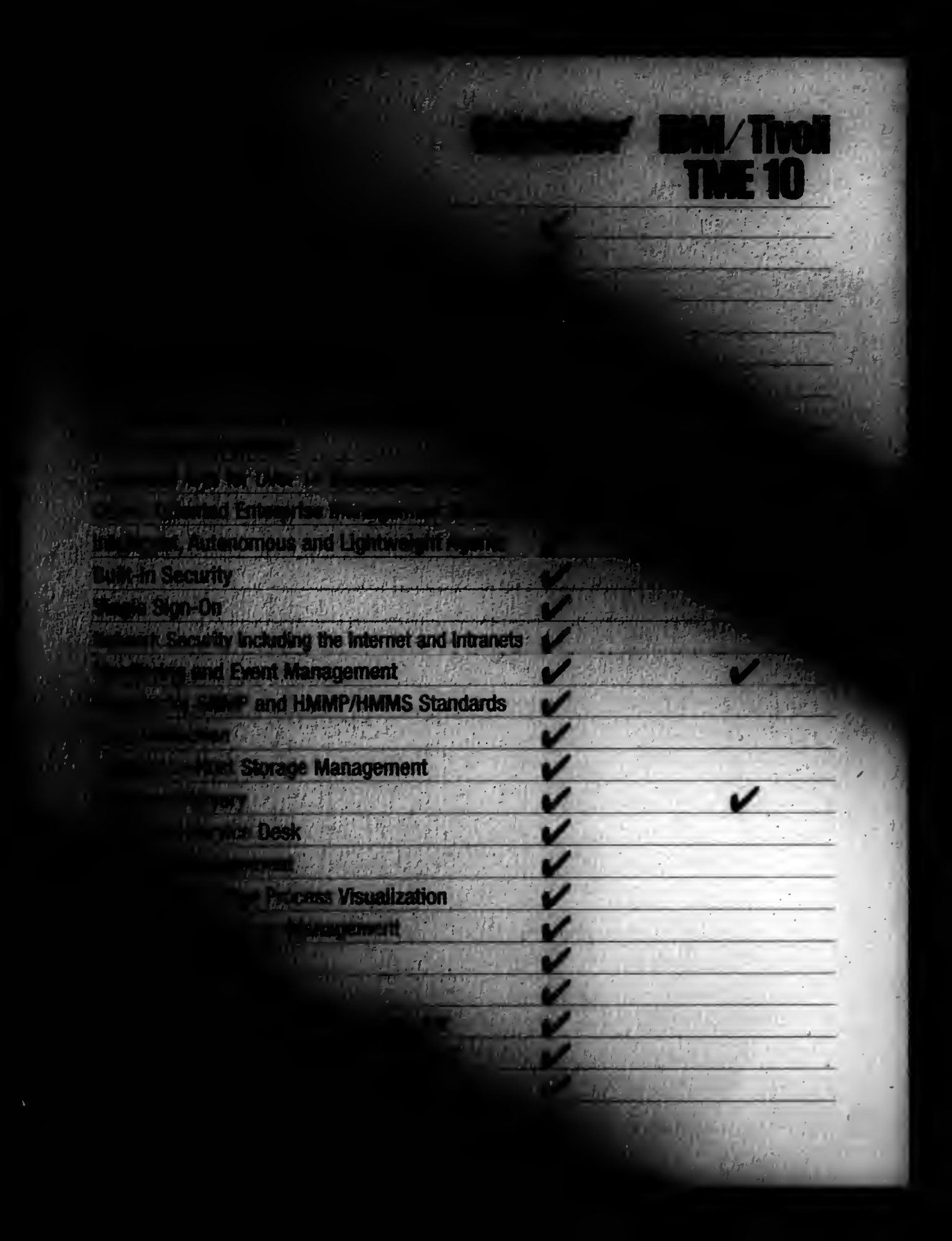
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Tracking the videoconferencing tab

▶ *Package will capture call accounting data to ease billing*

By Bob Wallace

TELCO RESEARCH GROUP soon will announce a package that enables information systems managers to track costs and bill end users for videoconferences.

The Videoconference Accounting System combines Windows NT or Windows 95 software with polling devices to capture call accounting data from equipment used to establish videoconferences. It will ship by year's end.

"Today, videoconferences go largely unaccounted for in intracompany scenarios," said Christine Perey, president of Perey Research and Consulting, Inc. in Placerville, Calif. "And we've seen users build proprietary homegrown systems to be able to account for costs and do billing themselves."

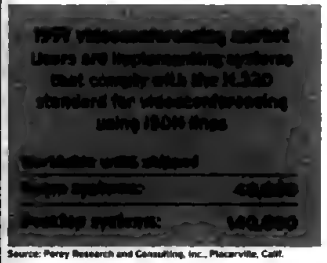
The system was designed to work primarily with room videoconferencing systems, but it also can handle desktop systems, according to Nashville-based Telco Research. A separate package for PC-based systems is in the works.

The installed base of PC and room videoconferencing systems worldwide is roughly 250,000 to 280,000 units, Perey said.

"Today, videoconferences go largely unaccounted for in intracompany scenarios. And we've seen users build proprietary homegrown systems to be able to account for costs and do billing themselves."
– Christine Perey, Perey Research and Consulting

Videoconference Accounting System works with videoconference bridging systems from networking vendors, including Lucent Technologies, Inc., Ascend Communications, Inc. and Madge Networks, Inc., a Telco Research official said. It can support videoconferencing systems from Intel Corp., PictureTel Corp. and others.

The Videoconference Accounting System collects call accounting data — including date, time and duration of the conference — from multiple systems and places the information in a common format. The raw usage data is applied to a price rate preset by the IS manager or to the price of a wide-area network service, such as Integrated Services Digital Network, to determine who owes how much for each videoconference.


1997 videoconferencing market
Users and implementing systems that comply with the H.320 standard for videoconferencing using ISDN lines
Worldwide units shipped
Room systems: 40,000
Desktop systems: 140,000
Source: Perey Research and Consulting, Inc., Placerville, Calif.

The information is included in reports generated by the system. The reports also include traffic information, such as peak conferencing periods, and log items for each time a channel in a videoconference goes down. The system can send an alert to an IS manager's network control center.

Pricing for the Videoconference Accounting System starts at between $8,000 and $9,000. Users also need to buy a stand-alone data collection device for each site. The price of that device hasn't been determined yet. □

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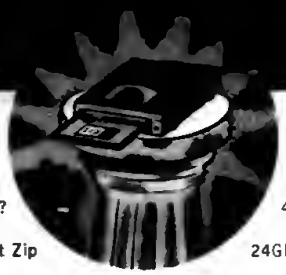

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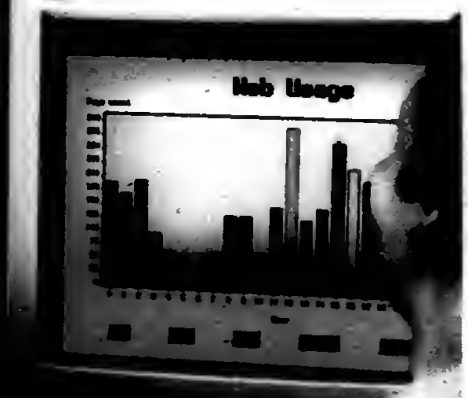

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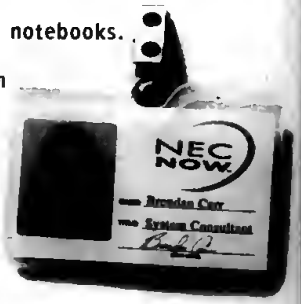

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Employers skip background checks

CONTINUED FROM PAGE 1

Yet the survey found that only 25% of the 104 businesses routinely do criminal history checks on IS applicants. Just 11% of those polled said they routinely check credit histories to see whether an IS applicant has major financial problems that could spur misconduct.

COVERING TRACKS

Security consultant John Case tells the story of a company that was victimized by a burglar in the IS department who covered his tracks on the computer system. The employee had committed a near-identical crime at his previous job, but the new company hadn't checked out his past before hiring him.

"Getting a bad apple in IS can be a lot more catastrophic than a bad apple in other areas because of the terrific opportunity they have to accomplish and cover up their activities," said Case, president of John Case & Associates in Del Mar, Calif.

Caterpillar, Inc. recently contemplated doing credit and criminal checks, at least for key jobs such as mainframe and network support personnel.

The employees in those jobs are "people who, if they had a loose screw or grudge, could really damage us," said Jim Miller, manager of IS administrative services at Caterpillar in Peoria, Ill.

But because of the company's "less suspicious" Midwestern culture, Miller said, it decided not to mandate any new checks for now.

The need for criminal history checks has never been more important, because of a relatively new legal doctrine called "negligent hiring."

In more than 30 states, courts have held that a company can be held liable if one of its employees goes on a crime spree — even after-hours. Employers tend to lose the cases if they failed to do a background check that would have turned up evidence of previous misconduct.

The financial penalties for negligent hiring and similar cases average $810,000, according to Pinkerton's, Inc., an investigative service in Los Angeles.

Aware of the trend, some companies are strict. First Chicago NBD Corp. in Chicago, for example, runs the fingerprints of new hires against police databases. And criminal history checks are part of the screening process for every potential Owens Corning worker.

Yet Owens Corning doesn't regularly do credit checks or test applicants for the basic programming skills claimed on resumes. Nor does it depend on previous employers to shed light on anything but start and end dates.

The hiring manager's "interviewing instinct" is a better gauge of character than anything else, said Pete Dzubay, leader of corporate staff human resources at the Toledo, Ohio, company.

"I can think of only two instances where we made a mistake," Dzubay said. He declined to provide details.

Owens Corning probably has been lucky.

Recruiter Amy Naples said her company, Bluestone Software, Inc. in Mount Laurel, N.J., regrets the day it hired a software consultant before seeing his credit report, which was requested during the hiring process.

"He had been on a client site and disappeared for days," Naples said. A string of corporate credit-card receipts showed that the consultant "had found himself a woman and gone to some degenerate hotels and motels," she said.

He went on a shopping spree, as well. "Eyeglasses, leather coats, leather this and leather that. He charged several thousand dollars of stuff that was totally not billable," Naples said. Bluestone had to pay the credit-card bills.

Credit reports can flag flighty people such as the leather aficionado by showing any big debts or defaulted loans. Those are problems some potential employees might want to fix by stealing from a new boss, recruiters said.

TRADE-SECRET THEFT

Not knowing the background of IS employees also can endanger company trade secrets.

Job hopping, outsourcing and the ease of copying computer files are factors that make proper background checks essential for internal hires and contractors, said Peter Toren, a U.S. Department of Justice lawyer who prosecutes corporate espionage cases.

More than $24 billion per year is lost to trade secret theft, which is a crime most often executed by company insiders, Toren said. Yet U.S. managers "are often delinquent" in doing background checks, especially in today's tight job market.

To the time it takes to conduct a thorough background check, a good IS candidate can decide to sign on the dotted line for a competitor.

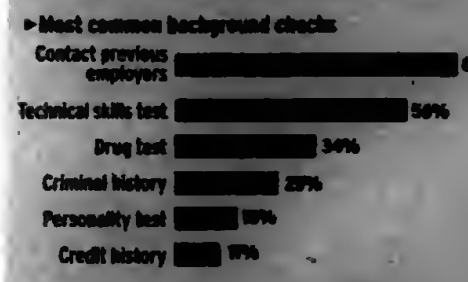
"The real world is depending on a particular project demand or need to get an individual in to fill a key position. We probably are somewhat guilty of" rushing the background check process, acknowledged John Rudin, chief information officer at Reynolds Metals Co. in Richmond, Va.

All told, digging up criminal history, credit reports, references, education transcripts and civil lawsuits can take from two days to several weeks.

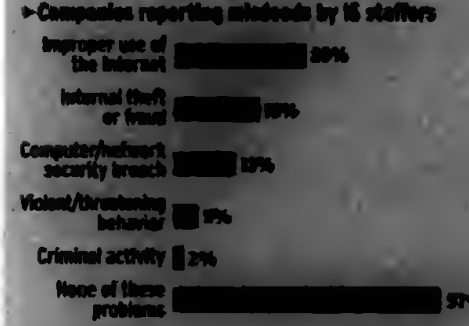
"We're a $4 billion company growing at 30%, so there's a tendency just to get a qualified person," said Allan Ditchfield, CIO at Progressive Insurance Co. in Cleveland.

"It's like, wow, we're lucky to get this person. I hate to think he's a felon, but can he program?" Ditchfield said. □

Although only one quarter of the companies surveyed check the criminal histories of IS job applicants...



... many companies say they have had serious problems with certain IS employees


▶Companies reporting misdeeds by IS staffers
Improper use of the Internet 20%
Internal theft or fraud 10%
Computer/network security breach 10%
Violent/threatening behavior 3%
Criminal activity 2%
None of these problems 57%

Base: 104 supervisors involved in corporate IS hiring; multiple responses allowed

Source: Computerworld Information Management Division, Framingham, Mass.

Catching techno-fibbers

IS departments are rushing to hire people with sought-after skills such as Java, SAP or Internet expertise. But they may not get those skills unless they do reference checks or skills testing to weed out the resume liars.

"People lie constantly," said Harvey Bookman, president of Bookman Consulting, Inc., a skills testing company in New York. "But they're getting hired."

Numerous studies show that at least 20% of all resumes contain lies or conceal damaging information. The *Computerworld* survey found that 43% of the 104 businesses surveyed reported that IS job applicants had exaggerated or lied about their technical skills in the past 12 months.

Some employers found out via pre-employment testing, but others found out only after the worker was on the job, the survey indicated.

Furthermore, some companies don't seem to care whether a new hire can actually do the work assigned, Bookman said.

He recalled an incident where testing showed that an applicant falsely claimed expertise in Microsoft Corp.'s Visual Basic language.

"We told them this person does not have the ability to do [Visual Basic] work," Bookman said. "They hired him anyway. They said they just needed bodies."

Current popular fibs are claims of expertise in SAP applications, Java and Cobol, Bookman said. Java lies are the toughest to detect because someone with reasonable C++ skills can "get by with an OK mark" on a Java test, he said.

— Kim S. Nash

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THIRD-QUARTER FINANCIALS

Computer Industry

AT&T CEO brings technology strength

▸ *Users say the appointment of IBM veteran should lead to new data services*

By Matt Hamblen

AT&T CORP. business users said they expect new CEO C. Michael Armstrong to use his technology background to deliver new data services.

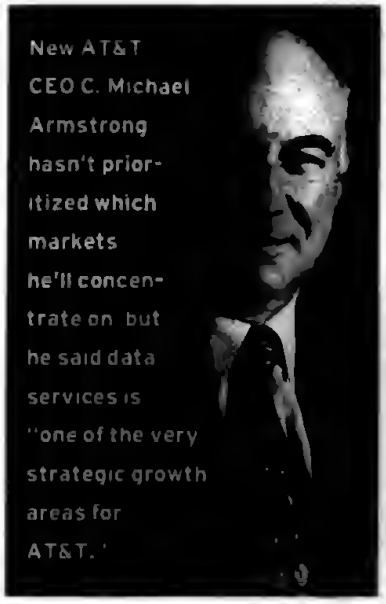
Armstrong spent 31 years at IBM, where he rose from systems engineer to chairman of IBM's World Trade Corp. Since 1992, he has been the chairman and CEO of Hughes Electronics Corp. in Los Angeles.

"I actually am hopeful for AT&T" with the Armstrong appointment, said Dan Taylor, an industry analyst at Aberdeen Group, Inc., a research firm in Boston. In July, Taylor described AT&T as being uncertain of its direction [CW, July 28].

Armstrong is "far more of a technologist than [AT&T CEO] Bob Allen ever was," Taylor said. He said that under Armstrong's leadership, Hughes has become a major player in the satellite business.

Armstrong, 59, will replace Allen, 62, on Nov. 1. Allen will continue to serve on the AT&T board through February.

Tony Dattola, a network engineer at Perot Systems Corp. in Plano, Texas, said his company is already "pretty happy" with AT&T. Perot Systems uses AT&T for frame-relay and Asynchronous Transfer Mode (ATM) data services. AT&T "is so big that we don't care whether it's a janitor changeover or a new CEO, just so long as service is good," Dattola said.



New AT&T CEO C. Michael Armstrong hasn't prioritized which markets he'll concentrate on but he said data services is "one of the very strategic growth areas for AT&T."

Analysts said AT&T will need to focus on growing data and voice services to businesses, partly to fend off the challenge by WorldCom, Inc. in Jackson, Miss., which wants to sell a complete voice and data package to large enterprises.

HELPING HAND

To wage such a battle, AT&T needs to partner with a technology company — perhaps even Lucent Technologies, Inc. in Basking Ridge, N.J., industry observers said. Lucent was created in 1995 when Allen restructured AT&T.

Analysts estimate AT&T's managed data services for businesses probably account for less than 2% of its $52 billion in annual revenue. But it could become a large market, and AT&T should make it a higher priority than entering the local telephone market.

In an interview with reporters last week, Armstrong didn't prioritize which markets he will concentrate on, but said data services is "one of the very strategic growth areas for AT&T."

Business customers want more service guarantees, lower-cost offerings of ATM service and voice and data integration, analysts and users said.

AT&T also named John Zeglis, 50, former general counsel at AT&T, as president. The company last week announced third-quarter earnings that were 15% below the same period last year, but ahead of analyst projections. □

Red Pepper founder steps down from PeopleSoft post

▸ *Leader of federal government unit to take over*

By Randy Weston

PEOPLESOFT, INC.'S struggling manufacturing unit is losing its head.

Monte Zweben, founder of Red Pepper Software, Inc. and the visionary behind PeopleSoft's year-old push into the manufacturing world, is leaving the Pleasanton, Calif.-based company.

"In a short period of time, Monte brought a lot of credibility to PeopleSoft in the manufacturing community and value and understanding to our manufacturing needs," said Steve Cooper, director of strategic information systems at Corning, Inc. Corning is the largest customer of PeopleSoft's manufacturing software.

Zweben joined PeopleSoft last year when the enterprise resource planning software vendor bought Red Pepper.

Red Pepper makes a constraint-based planning engine that lets users run "what-if" scenarios about their operations and make changes in manufacturing schedules based on changes to preset plans.

Zweben spent much of his time at PeopleSoft embedding Red Pepper into the recently introduced manufacturing module. PeopleSoft launched the module last December.

IN THE DRIVER'S SEAT

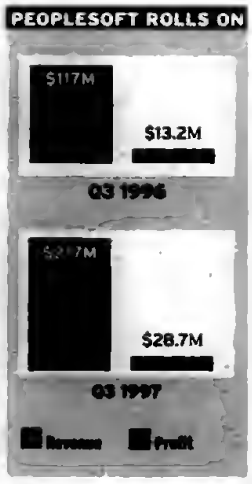
Jeffrey Carr, who previously led PeopleSoft's federal government unit, will replace Zweben.

Judith Hodges, an analyst at International Data Corp. in Framingham, Mass., said Carr's lack of experience with manufacturing shouldn't be a concern if his support staff is knowledgeable. "[PeopleSoft] needs to seek another strong leader, and perhaps they will have this in Jeff Carr," Hodges explained.

"It's the strength of [Carr's] leadership in guiding the course of the manufacturing product that will ultimately make PeopleSoft successful."
– Judith Hodges, IDC

"It's the strength of his leadership in guiding the course of the manufacturing product that will ultimately make PeopleSoft successful," she said.

Cooper agreed, saying he will draw conclusions after he meets this week with Carr and other PeopleSoft officials. □



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THE SCIENCE AND ART OF PROGRAMMING

GTE

OPINION

The TDL tango Just when I thought I'd heard every techno-acronym,

along comes the TDL (Too Damn Long) factor.

I learned about TDL from an IS manager who said users would find the application download time in a network computer setting to be TDL. This manager figured that until network computers could "guarantee" quicker performance, the TDL factor was a major roadblock.

That got me thinking about other TDLs in our industry. And knowing the importance of documentation, I started a list. Here, for your acronym-enjoying pleasure, are new categories for the TDL factor:

Too Damn Late — For the Justice Department to make another run at Microsoft. For Steve Jobs to save Apple. For IS execs to finally get around to thinking, "Hey, I wonder if my company has a year 2000 problem, too?"

Too Damn Loose — Vendor grip on user realities.

Too Damn Loud — Those silly noises that Windows 95 makes when it boots up. The rhetoric about how Java is going to change our lives and bring peace to the planet.

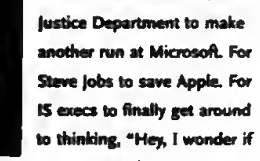
Too Damn Low — OS/2 market share. User patience with the help desk staff. Productivity gains from computers. Year 2000 budgets. Network bandwidth.

Too Damn Loony — The new Japanese clothing that protects people from low-level electromagnetic radiation from computers. Get-rich schemes via E-mail. Internet chat rooms.

Too Damn Large — The cost of data warehouses. Internet start-up initial public offerings. That $600 billion estimate to fix all our year 2000 problems. Bill Gates' house.

Too Damn Ludicrous — The IRS computer systems snafus. Market share numbers from computer industry analysts. The NetPC.

Too Damn Lame — This column?



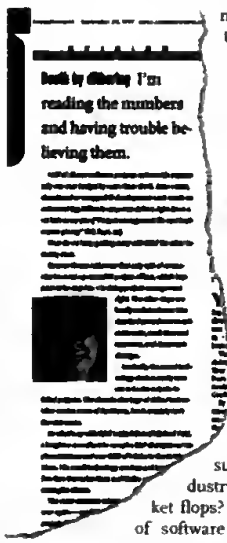
Maryfran Johnson, *Executive editor*
Internet: *maryfran_johnson@cw.com*

LETTERS

Managing projects isn't easy

EXECUTIVE EDITOR Maryfran Johnson's editorial ["Death by dithering," CW, Sept 29] addressed a critical subject for project managers.

In the clients we serve (more than 60 Fortune 200 companies worldwide), these managers are mostly well-empowered. But they seem to be reluctant to use their power, causing them to cave in to the latest demand made on their project, which definitely increases the probability of "death by dithering."



A project manager must be willing to argue, negotiate, fall on the ground and turn blue to maintain the simplicity and clarity of the project plan. Managing change behavior is more important than technical skill.

Norman H. Carter
President, CEO
Development Systems International
Studio City, Calif.

MARYFRAN JOHNSON's editorial on software development projects said that "scrapped IS development sends an estimated $59 billion in corporate dollars down the rat hole each year" and that "no other industry" gets away with this. Why do people suspect the software industry has a patent on market flops? And what percentage of software development efforts were scrapped because of unrelated causes such as corporate acquisition, competition, poor marketing and lack of sales representation?

I find it hard to believe that this $59 billion is higher than, say, losses because of new product development in pharmaceuticals. Perhaps subscribing to market reports where this sort of thing is published is itself a symptom of "death by dithering."

Rich Snow
Belmont, Mass.

Domain category is in use

WHILE YOUR article about Internet domain names was timely and knowledgeable ["The Domain name game," CW, Sept. 29], I couldn't let the occasion pass without noting one error. Your reporter claims that for reasons of the Internet's U.S. roots and early dominance, the top-level domain "us" isn't used.

I beg to differ. Maybe it's underused to the point of not being recognized more than half of the time, but it's out there and working fine.

Michael H. Riddle
Attorney at law
Papillion, Neb
mriddle@papillion.ne.us

User has good experience with E-mail responses

YOUR ARTICLE ["Consumers www.wait for E-mail, CW, Sept. 15] started out sounding rather negative, but I'd like to say I've had some positive experiences contacting companies via Internet E-mail.

Here are just a couple of examples: I received a telephone call within 15 minutes of sending an E-mail to the GE webmaster, and Dell responded within 18 hours via E-mail with the answer to my question.

In general, many companies are just now taking the Internet seriously, but some are ahead of the curve in catering to computing consumers.

Many companies are just now taking the Internet seriously.

Kevin Quilliams
Senior business consultant
St. Petersburg, Fla.

Computerworld welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Maryfran Johnson, Executive Editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.

How to end the Java war

Patricia B. Seybold

Customers are not happy about the current tug-of-war between Sun and Microsoft over Java. Microsoft's refusal to include the core Java classes in its Java implementation not only violates its legal agreement with Sun, but it makes developers' lives more difficult.

Users are smart enough to know whether they need total platform portability.

Development groups who have Java pilots and projects under way now will be pressured to jettison them, losing months of valuable development time. That isn't good for productivity, nor for the IT industry.

Java is a very productive programming language. Every development team I've encountered that has moved from C++ to Java would never go back. They're meeting deadlines, and their response times are good. Memory leaks are a relic of the past. Developers now widely use Java for server-side applications, not just browser applets.

Customers want completely portable Java. But they don't mind if vendors also offer extensions to the core classes to optimize functionality on their particular platforms. They're smart enough to know whether their particular application needs total platform portability or whether they can afford to optimize it for a single platform.

But they also want to be able to use the most popular and productive programming language — Java — on the most popular and cost-effective server platform — Windows NT — without sacrificing code portability.

Ever since Sun announced the Java Foundation Classes and Enterprise JavaBeans — which solve most of the portability problems in Java Development Kit 1.0 and provide a portable server runtime environment — Microsoft has been spreading fear, uncertainty and doubt about Java portability.

The real issue is that Microsoft is afraid Java will steal business away from its main market — the NT operating system. I don't think NT needs protecting. As Bill Gates said to me a year ago, "Every day is a good day for NT. Every day we sell more NT than we did the day before."

Sun's strategy with Java shows it learned some painful lessons from the years-long struggle to unify Unix. The most important is that a single, universally supported specification is far more efficient in growing a market than multiple specifications. But Sun also learned that relying on industry consortia to define and evolve specifications can delay consensus for years.

In Java's case, Sun needed a standardization process that could occur in Web time. It took input from licensees but protected the specification from fragmentation by holding on to it rather than turning it over to any industry group.

Now Microsoft is complaining about that strategy. If Java is supposed to be "open," Microsoft reasons, its specifications should be evolved by industry consensus, not by Sun's dictate.

Here's my proposal. Instead of letting the litigation drag on (which hurts customers and benefits Microsoft), Sun should take a page out of Microsoft's playbook. Microsoft gave the ActiveX specification to the Microsoft-controlled Active Group within the Open Group.

Why doesn't Sun offer the Java specification to a Sun-controlled unit within the Open Group. Sun could still call the shots on development of its specification.

In exchange for adhering to its definition of an "open" standard, Microsoft should, in turn, support the core Java classes in its operating systems and browsers.

Stop the war, now. We want to get on with our jobs. □

Seybold is president of Patricia Seybold Group in Boston. Her Internet address is pseybold@psgroup.com.

Who's crying over spilt Java?

John Gantz

Omigod. Could it be? Could I be personally responsible for the meltdown over Java? Could I have visited this plague of uncertainty on so many developers? All I did was ask Scott McNealy, CEO of Sun and the plaintiff in this case, a simple question during a recent meeting.

How was he going to get the world to know, much less care, about the difference between 100% pure Java and slightly impure Java (like the Microsoft kind)?

Wouldn't 99 and 44/100ths percent pure Java be pure enough? Could *any* Java be 100% pure, anyway? I didn't believe a weekly conference speech or a huge advertising budget would do it.

Actually, McNealy found a better way. By suing Microsoft, he put the 100% Java issue front and center, ensuring for Sun oodles of free press.

And in one swift action, McNealy positioned Microsoft as the bad guy. Bastion of proprietary code. Impeding progress. Plucking dollars out of Java developers' wallets. Now anything Microsoft says, whether true or not, sounds like the whining of a bully bested at his own game.

It doesn't matter that Sun (which controls the Java application programming interfaces) would act just like Microsoft if Java were as ubiquitous as Windows. Sun is now the leader of the free world.

Of course, I don't think I had anything to do with Sun's lawsuit. But anyone who thinks it isn't as much a PR stunt as a lawsuit hasn't followed this industry.

Sharp computer companies have used lawsuits for nonlegal reasons for years, going back at least as far as the private antitrust suits against IBM. A good lawsuit can tell developers you care about their investments in your products. It can let investors know you are more confident of your market position than maybe you really are. And it can generate awareness among customers in a way that brings a more favorable settlement than a pitched marketplace battle.

The only thing I'm wondering about my lawsuit-as-PR theory is whether Microsoft intentionally drew Sun offside. Did Microsoft not implement the full Java Development Kit (JDK) specifically to get out of the license agreement? Did Microsoft choose the time and place for this battle and Sun not know it?

Sun must have known what Microsoft was going to ship with Internet Explorer 4.0. Microsoft must have had little birdies telling it that Sun would take action. Who choreographed what here?

Computer companies have long used lawsuits for nonlegal reasons.

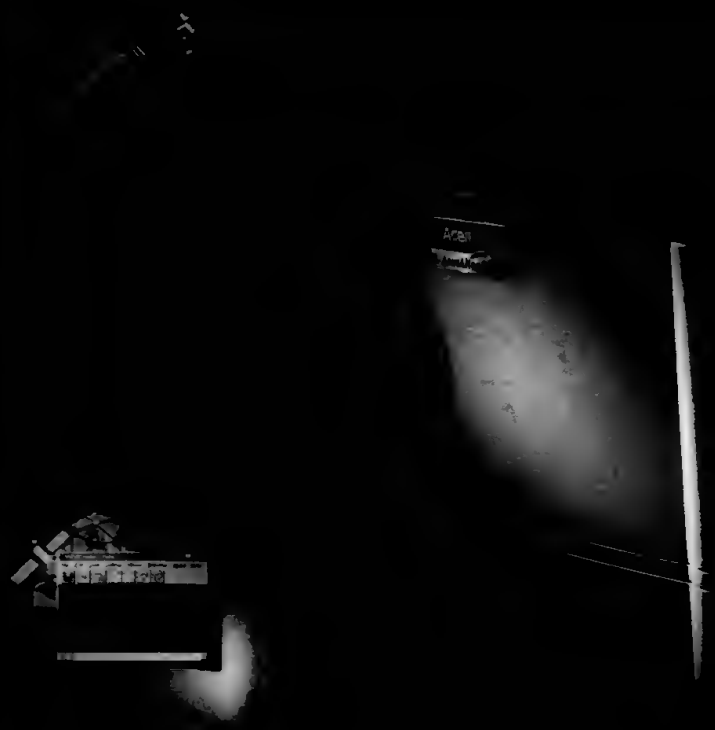
For you, it probably doesn't matter. Most likely the lawsuit will drive you to scrutinize your Java development. Perhaps you'll come to believe that Sun has your best interests at heart and that Microsoft is in this business only for Microsoft. (Score one for Sun.)

But then again, any cloud over the future of Java and the possibility that it will be truly platform-independent favors Microsoft. Better to sow that uncertainty now than later, when there's been more investment in JDK 1.1 applications. (Score one for Microsoft).

Because I never thought there would be a world filled with applications based on 100% pure Java, and because I see a great role for Java in places Windows doesn't go (like embedded devices, information appliances, etc.), I tend to see this bare-knuckle bout more as entertainment than business. But I'm not a software developer with resources invested in either side.

My advice? Make sure you strip out the PR and posturing before you make any business bets on how this will all come out. □

Gantz is senior vice president at International Data Corp. in Framingham, Mass. His Internet address is jgantz@idcresearch.com.



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Corporate Strategies

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Briefs

SWIFT and sure

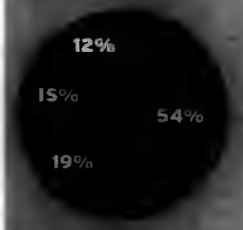
Members of the Society for Worldwide Interbank Financial Telecommunication (SWIFT) got a boost when Candle Corp. recently announced Candle SwIft Assess. The software extends secure data messaging from member companies to the SWIFT network. SWIFT handles more than $2 trillion in daily payment messages on the network.

Oracle goes to college

In a bid to ease the technical skills shortage, Oracle Corp. has committed $30 million in software, course curricula and support services to 30 universities. Under the plan for this school year, the universities will include courses in data warehousing, Oracle database management systems and Developer 2000, the vendor's development tool kit. Students who complete the courses will be entered into a worldwide recruiting database. The University of Montana in Missoula, Mont., Northern Arizona University in Flagstaff and the University of New Orleans are among the participating schools.

SECURITY ISSUES

Who controls information security and physical security?



- Physical separation between two departments
- Formal coordination between two departments
- One department controls all
- Go it alone

Fortune 1,000 security [illegible]

Cops take a byte out of crime

▸ *Handhelds track domestic violence cases*

By Kim Girard

EVERY MORNING before trial, Kim Thomas, an investigator at the state attorney's office in Clearwater, Fla., logs on to her PC to check for pending domestic violence cases filed on the Largo, Fla., police department's intranet.

The information is crucial to Judge Walter Fullerton's decision whether to toss out the charges against an accused batterer or move forward with the case. With evidence on a laptop in front of him — often with an audio clip of a victim pleading for help and photos revealing cuts and bruises — he doesn't need to rely on a frightened woman's side of the story.

"[The woman] will tell us, 'It's no big deal,' " Thomas said. "I can say, 'I have a photo of your.

Fighting crime, page 40

BOB MORGAN

Largo Police Sgt. Brian McKeon can file multimedia crime reports from the street

KeyCorp Web-enables HR systems

▸ *Setup lets employees update their own files*

By Thomas Hoffman

AS KEYCORP'S director of corporate sourcing, Jon Lienert manages a staff of 120 people scattered from Albany, N.Y., to Tacoma, Wash., that helps the Cleveland-based bank buy everything from pencils to mainframes.

When Lienert had to reach a staffer after-hours about a contract, he would usually have to go to the office and dig out a personnel file to get their home telephone number.

No more. Thanks to a recent human resources automation project, Lienert and about 2,100 other managers can now dial in to the bank's human resources systems intranet and access employee information from wherever they want.

"I can't think of one [piece of HR information] I haven't been able to find" using the new system, Lienert said.

KeyServices' Kathleen Starkoff: The system "allows HR people to be HR people and not data-entry clerks"

KeyCorp, the nation's 14th-largest bank with $70 billion in assets, has grown primarily through mergers and acquisitions, including a 1993 marriage with Society Corp. Each acquisition brought another HR department, another set of HR systems and usually a different set of HR processes.

Over time, KeyCorp's potpourri of HR processes made it difficult to manage more than 25,000 employees across 46 states. For example, KeyCorp's mortgage group might require three approvals to bring on a new hire; the bank's equipment leasing arm might not require any.

"We recognized that we don't need [different] HR organizations, we need good, efficient HR processes," said Kathleen Starkoff, senior vice president at KeyServices, the bank's information systems and operations unit.

As part of an effort to develop a common HR system for the bank, KeyCorp last October installed a hybrid system that included a World Wide Web-based interface, an integrated voice-response system and a core HR system running PeopleSoft, Inc. software.

KeyCorp, page 40

Bank finds gold with Web system

By Sharon Machlis

WHILE MANY organizations wrestle with how to authenticate users on consumer World Wide Web sites, Toronto-based Scotiabank has already issued its 10,000th digital certificate for customers who can now bank and trade online.

Scotiabank has issued 10,000 digital certificates.

In less than two months of operation, Scotia Online has become one of the world's largest issuers of such consumer certificates — and more popular than bank executives expected, said Paul Wing, vice president of system security and controls. "It's a very successful application," he

Bank, page 40

Fighting crime with handheld computers

CONTINUED FROM PAGE 39

injuries in front of me, and you said, 'He hit and punched me' in your statement.' "

Strong evidence could mean the difference between temporary incarceration and counseling, which the prosecution typically wants, and the accused batterer returning home to wait for a lengthy trial process.

BOB WALKER

Investigator Kim Thomas uses the Largo Police web site to check up on domestic violence cases

PROSECUTIONS GO UP

By working with the state attorney's office and using the intranet to post evidence, the percentage of domestic violence cases the Largo Police Department can prosecute has jumped from 16% to 85% since 1993, said Sgt. Brian McKeon. Of those 85% charged, all have plea-bargained and received counseling, McKeon said.

To control access to the domestic violence web site, everyone who logs in must use a password, and privileges are limited. A firewall locks out any IP address that isn't on the list.

Largo's domestic violence intranet project is only part of the department's bigger technology plan. The department is committed to equipping all users with thin clients — network computers and handheld computers — to access shared information on the web. All access to the Largo police records and dispatching servers now is done via a World Wide Web browser.

"The philosophy behind putting [information] on the Internet is no matter what the person has at their desk, we won't have to worry about the client," said Mike Pearlman, systems administrator for the city of Largo, whose goal is to keep maintenance simple for a 10-member information systems staff that maintains equipment for 650 municipal employees. "If somebody messes up [an application], they turn [the computer] off and back on. There's no reloading Windows on each one."

GOING WITH APPLE

For police officers, Largo officials plan to bypass investment in costly laptops and instead buy Apple Computer, Inc.'s EMate and MessagePad 2000. The department tested Windows CE handhelds, which run "light" versions of Windows 95, before picking the EMate. Pearlman said they ruled against the Windows CE devices because the keyboards were too small and impractical. Kevin Dulaney, MIS manager for Largo, said he also found the EMate's operating system to be much more stable for Internet use than Windows-based handhelds.

Using the EMate, officers will be able to post arrest reports directly to the web site via a wireless network and a word processing tool used within a browser. The department plans by January to install up to 20 EMates in cruisers, which officers will use to access electronic mail, write reports and connect to the computer-aided dispatch program. The dispatcher details calls that are holding and which officer is assigned to a call. Officers also will be able to access arrest records, prior incidents at a site and statewide warrants. □

KeyCorp links human resources via the Web

CONTINUED FROM PAGE 39

The HR environment lets employees enter and update their own personnel information. That frees up the bank's 425 HR employees "to be HR people and not data-entry clerks," Starkoff said.

Although she declined to quantify the cost of the project, Starkoff said the systems already helped the bank hire and fire people faster than it could in the past. That results in "substantial" savings because pay and benefits information is up to date and accessible from a single location, preventing glitches such as terminated employees being paid for short periods after they leave the company, Starkoff said.

Using Santa Clara, Calif.-based Edify Corp.'s Electronic Workforce software to develop thin-client interfaces, KeyCorp enabled about 10,000 employees across 200 U.S. sites to access the system via the Web, Starkoff said. The integrated voice response system, which went live in May, was developed with Quality Consulting Services in Santa Clara, Calif., because KeyCorp lacked telephony expertise, Starkoff said.

There have been a few potholes along the way. Last December, KeyServices lost half of its 30-member project team to outside recruiters, delaying the project by a month while the bank trained existing staffers and new hires on PeopleSoft and client/server skills. "We were able to bounce back pretty quickly," Starkoff said.

The bank's efforts reflect a growing trend among companies to use technology to empower employees to enter and update personnel information online. "That trend is under way, but by no means is it complete," said Joseph F. Coates, president of Coates & Jarrett, Inc., a research firm in Washington.

Nor is KeyCorp's human resources effort complete. Next year, the bank plans to upgrade its PeopleSoft system and add training and administration functions to its suite of applications.

"We make a lot of organizational changes here with acquisitions and divestitures and the system gives us the flexibility to do that quickly and easily," Starkoff said. □

Bank finds gold in 'net certificates

CONTINUED FROM PAGE 39

said. "We never thought we'd do 10,000 between Labor Day and Canadian Thanksgiving [mid-October]."

The large number of users shows a "pent-up demand within the bank" for electronic services that are both easy to use and secure, Wing said. "Customers were looking for this," he said.

Wing said senior management gave strong backing to the project and "treated it as a business decision and not as a technology decision." Decisions focused on opportunity and risk for a new business venture, not on which specific technology to use.

To use Scotia Online, bank customers download a 1.3M-byte package that includes digital certificate software from Entrust Technologies, Inc. in Richardson, Texas. Customers must call the bank, answer several questions to prove their identity and receive a special one-time password. The customers use that password when they set up the software, entering it into the Entrust security software and not their browsers.

After the password is validated and a user connects to Scotia Online, special encryption keys are exchanged between the bank and the user's PC. The bank then issues certificates, and users can choose their own passwords for subsequent sessions. The entire registration and setup process was designed to take about 15 minutes. Users then connect to the Web site via their usual browser.

SECURITY CONTROL

Scotiabank, one of Canada's largest financial institutions, initially tested a banking system based on Secure Sockets Layer (SSL) technology one year ago. But executives decided that wasn't acceptable for an online brokerage service, because it depended on browser security and users' individual settings.

> Customers "don't have to know anything about public key cryptography ... It's all transparent
>
> — Paul Wing, Scotiabank

"We want to control the security and not make the customer make those decisions," Wing said. When consumers decide on things such as browser encryption strength and key lengths, many don't understand the technologies and security risks involved, he said.

The Scotia Online software temporarily takes control of a customer's browser settings, overriding whatever conventional SSL is being used for other Internet transactions so the digital certificate authentication is required.

Several certificates are involved for different security purposes, Wing said — one that encrypts data and another for the digital signature that proves the identity of the sender.

Customers "don't have to know anything about public key cryptography," Wing said. "They don't know when the certificate is generated. It's all transparent."

Using such certificates is more secure than SSL, because SSL deals only with data encryption to prevent eavesdropping or tampering, said Philip Carden, managing consultant at The Registry, Inc. in Hoboken, N.J. Certificates also prove the identity of the user — important when money is changing hands — while a digital signature proves that the transaction took place so it can't be denied later.

Wing said the bank recently received electronic mail from a customer who was surprised and pleased that he downloaded software at 7:15 and was banking by 7:30. "When you get indications from customers like that," he said, "then you feel good." □

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23. Dir./Mgr. Sys. Development, System Architecture
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51. Sales & Mktg. Management
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Operating Systems
(a) Solaris (e) Mac OS
(b) NetWare (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTStep

App. Development Products ☐ Yes ☐ No
Networking Products ☐ Yes ☐ No
Internet Products ☐ Yes ☐ No

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70. Mining/Construction/Petroleum/ Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
89. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
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31. Programming Management: Software Developers
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(c) OS/2 (g) Windows
(d) Unix (h) NeXTStep

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Networking Products ☐ Yes ☐ No
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The Internet

Briefs

CATCHING INTRUDERS

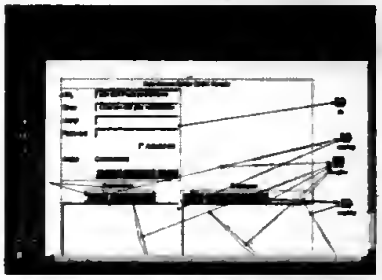
How do you detect intranet security violations?

- Don't monitor
- Catch intruders in the act
- Find out later in audit of log file
- Use both methods
- Don't know

Base: 295 corporate IS managers
Source: Business Research Group, Newton, Mass.

REVIEW► *VisualAge for Java, Enterprise Edition, Version 1.0*

All-in-one Java development



Composition Editor helps create edit-and-list boxes, buttons and other visual elements

By Ross Greenberg

IBM'S VISUALAGE for Java, Enterprise Edition isn't for the faint-hearted nor for the dabbler seeking a quick fix for a hefty problem such as accessing legacy databases through Java.

It takes an investment in time and effort, particularly if you have no experience with IBM's other VisualAge products. It is also an extraordinarily powerful application development tool, offering secure access to legacy and remote data in heterogeneous client environments.

VisualAge displays your program structure so it is easy to see the big picture in a complex enterprise system. Learning how to read those visual aids takes some practice. However, VisualAge for Java may be just what a large corporation needs to jump-start Java implementation throughout the enterprise.

All the needed development tools have been included in the suite, so once you learn the development environment, there generally is no need to leave it until your program is complete. That means there is no separate and time-consuming edit/compile/test/debug cycle.

Applications created with VisualAge for Java, based on Java Development Kit 1.1 (See

VisualAge, page 46

VisualAge for Java, Enterprise Edition, Version 1.0

OVERALL B GRADE

IBM
Armonk, N.Y.
www.ibm.com/ad/vajava

Price: $1,995
Pros: Very visual, reasonable to make distributed Java applications
Cons: Bloated code, lengthy learning curve
Ease of use: B-
Features: A

Catalogs reach out to outsourcers

By Gordon Mah Ung

WHEN ALLAN LEVY, owner of Apparel Alliance, Inc. in New York, wanted to put his catalog online, he knew the company didn't have the expertise or funding to do it.

"It would have certainly been more expensive to do it in-house; we're a medium-size company," Levy said.

Like many companies trying to decide whether to build or buy a World Wide Web site, Levy turned to an outsourcer to put the print catalog for Buffalo Jeans online.

Levy contracted Internet Tradeline, Inc. to computerize the catalog. Internet Tradeline, in New York, specializes in creating online catalog content for small to medium-size businesses.

The site lets sales representatives work with buyers via telephone while they both view up-to-date photos and information on the Web site, Levy said.

Chris Stevens, a senior ana-

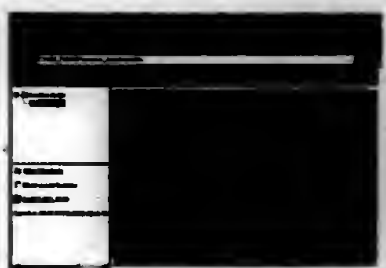
Catalog, page 44

Custom Web tools help engineers share data

► *Framework software expands business usage*

By Carol Sliwa

NEW SPECIALIZED Web tools from Framework Technologies Corp. in Watertown, Mass., can help architecture and engineering companies share graphical documents more efficiently, saving users time and money and changing the way they do business.



Aspects SiteBuilder lets users post engineering drawings to the Web

For instance, Black & Veatch LLP in Kansas City, Mo., a global engineering and construction company, uses Framework's Aspects SiteBuilder 2.0 and ProjectServer 2.0 not only to publish documents to the World Wide Web but to collaborate on projects and manage information.

SiteBuilder shipped in July, and ProjectServer shipped this month.

With the help of ProjectServer and a Web browser, employees can check in and check out drawings and automatically republish the documents and post any changes or additions made. An administrator can assign different levels of access to users.

"Being able to make this in-

Web tools, page 44

•IP networks

Combo tool boosts monitoring

By Patrick Dryden

CARAVELLE, INC. wants to tell managers immediately if their World Wide Web servers are sick or their TCP/IP network links are having trouble.

Java-based IPnetWatcher, now in beta testing for December delivery, combines traditional network surveillance with Web site monitoring to push status reports and alerts to operators anywhere via browser, electronic mail or pagers.

Besides checking routers and other devices with Simple Network Management Protocol agents, the tool watches the health of a Web server. IPnetWatcher tests the systems, links, database connections and software to warn about failures, dangerous threshold and even content

Combo tool, page 44

IPnetWatcher will check any device from any Java-enabled browser

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Catalog outsourcing

CONTINUED FROM PAGE 41

lyst at Aberdeen Group, Inc. in Boston, said it makes sense for some small or medium-size companies to try outsourcing instead of tackling the chore of putting a catalog online themselves.

"There's so many pieces that you need to coordinate [with electronic-commerce applications]. To have a company that can come in and tell you they can coordinate all the pieces and give you a fixed price, that's great," Stevens said.

Companies that outsource sites and are successful at electronic commerce can continue to build their presence online and add resources. And for those that fail, using an outsourcer may make it easier to cut their losses and run.

RESOURCE MANAGMENT

Upscale catalog company Hammacher Schlemmer Co. in Chicago decided to outsource its online presence to limit the burden on its information systems staff.

"It was a resource issue, plus we wanted to take advantage of people with experience in that medium," said Lester Hsieh, vice president of marketing at Hammacher Schlemmer.

Hammacher Schlemmer went with Web developer and outsourcer US Web Corp. in Santa Clara, Calif. The company's Web site will go live sometime this fall, Hsieh said.

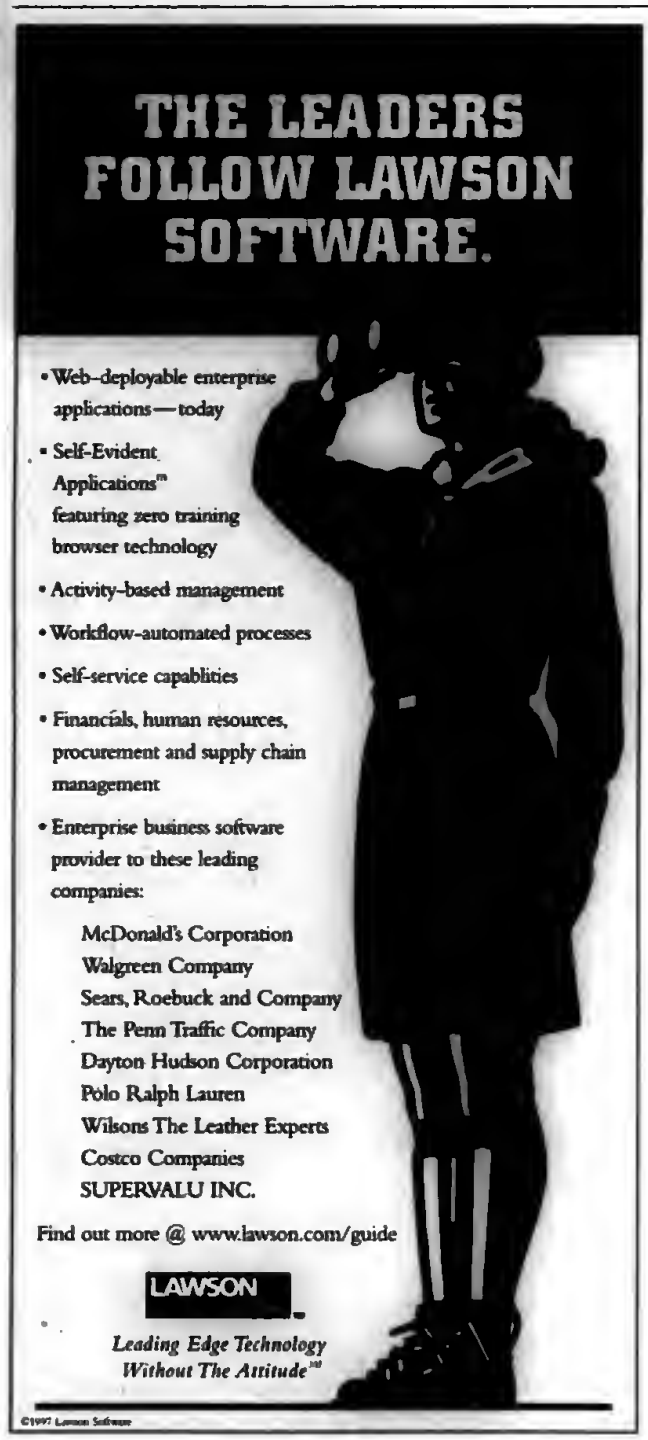
Rod McLeod, vice president of MIS at Recreational Equipment, Inc. (REI) in Kent, Wash., said the company had no choice but to build its own site.

"When we built it, there really wasn't anybody around in our market that could do the job," McLeod said.

REI hired consultants for advice, but the entire system is managed in-house. REI treats the 5,300-item online catalog like any of its retail stores. The company even has a store manager responsible for running it.

But for most businesses, whether to build or buy will be a difficult question to answer, Stevens said. Besides their level of IS sophistication, companies need to consider the number of items in the inventory and the number of transactions.

"Someone who's not willing to spend $100,000 on a Web site — they should outsource," he said. "It's not an easy process to go through. It's difficult. It's time-consuming." □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Web tools link engineers

CONTINUED FROM PAGE 41

formation available almost instantaneously to the construction site will save money," said Mark Harmon, an engineering technician/programmer at Black & Veatch. "When you're dealing with construction, the delay between getting changed documents from the office to the field can make a construction crew sit and wait, or perhaps something gets built incorrectly due to incomplete or incorrect information."

The company also plans to use tools from other vendors to access designs stored in databases, Harmon said.

Black & Veatch used to rely on mail, expensive telephone lines or data connections. When those connections were made, skilled computer users had to know how to manipulate the information.

At AEC Professionals LLC, a small architecture firm in Ferndale, Wash., specialized Web tools have led to easier partnering with companies in Arizona, Oregon and California. Designers can download drawings, modify them and post them back to the Web.

"Now we can do larger projects and compete," said Kelly Malone, a senior partner at AEC. Better communication early in the process also helps avoid costly changes later in the job, Malone said.

SiteBuilder also lets the company pump in more data associated with a project and set up links that lead to more detailed information. For instance, a design requiring sinks might include links to manufacturers.

"The product is easy enough to use, that I don't have to have a dedicated webmaster," Malone said.

Although Aspects SiteBuilder and ProjectServer are geared toward the engineering and design fields, the products also could be used by anyone who needs a graphics-oriented tool, such as software programmers sharing code, said Ted Chumas, Framework's vice president of sales.

The updated version of ProjectServer lets users drag and drop information through their browsers. The latest SiteBuilder adds JavaScript and Java components and lets users view text and graphics in the same interface.

A 10-user version of ProjectServer, which runs on Microsoft Corp.'s Windows NT Server, costs $10,000. SiteBuilder, which runs on Windows 95 and Windows NT, costs $3,000.

The tools support both Microsoft's Internet Explorer 3.02A and Netscape Communications Corp.'s Communicator. □

Combo tool boosts monitoring

CONTINUED FROM PAGE 41

changes, according to officials at Caravelle in Ottawa.

"Through scripts on the browser client, we will be able to do more than just ping a server. From Mac, Unix or Windows PC platforms, we could retrieve particular pages to check performance for customers," said beta tester Brad Casner, a Web service developer at Compuserve, Inc. in Columbus, Ohio. "We haven't seen anything like this to keep track of the Web server as well as the network connections."

Caravelle hopes to extend its reach by linking this tool to enterprise-scale management systems. Pricing will range from $595 for monitoring three nodes to $20,000 for unlimited coverage. □

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VisualAge for Java thinks big

CONTINUED FROM PAGE 41

review of Sun Java Workshop 2.0, page 85), are truly object-oriented. The programmer uses the Visual Composition Editor to create the interface, complete with edit-and-list boxes, buttons and other visual elements. The programmer then defines the properties of and interrelationships among those elements, known as Java-Beans.

By defining these interrelationships, or "connections," the majority of coding and programming happens automatically behind the scenes, albeit not in the most efficient manner. Your developers aren't out of jobs yet, because there is a good deal of programming needed to tighten things up and tweak things here and there. The structure of the code is nearly complete, but the programmer needs to add its functionality.

VisualAge for Java's Incremental Compiler means only the pieces of code added or changed need to be compiled. So, once the initial framework has been created, minor tweaks cause no delay. Creating the initial framework can be slow, though. Importing an Open Database Connectivity (ODBC) example into a project took almost four minutes on a 150-MHz Pentium-based machine with 64M bytes of memory. A cool thing about VisualAge for Java is that the debugger lets you modify a program even during testing. Being able to modify code an hour into a debugging session without having to start over is a programmer's dream.

Computerworld and ICE Recognize Web Innovators

"Best of Class" Solutions Selected at The Internet Open

The Internet Open, sponsored by Computerworld and held in September at the Internet Commerce Expo in Los Angeles, recognized innovation in Internet Commerce and Intranet/Extranet applications. Contestants demonstrated their technology on-line, from "turnkey" demonstration booths, to a prestigious panel of more than sixty industry leaders. Evaluation criteria included technical innovation, user-friendliness, security features, platform flexibility, visual impact and electronic transfer efficiency.

"Best of Class" Winners

Accounting, Purchasing and Administration
ELEKQM Corporation Sponsored by Microsoft

Consumer Products and Retail
Internet & Web Services Corporation Sponsored by IBM

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MKS Sponsored by Netscape

Data Warehousing/Data Mining, Search Engines and Decision Support
WinResources Computing Sponsored by Microsoft

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◄ *From left to right:* **Renee Gallant**, Marketing Manager, Microsoft Corporation "Industry Sponsor"; **Michael Rogers**, President, Computerworld; **Gary Landry**, Executive V.P of Electronic Commerce, ECWerks, Inc.

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– Renee Gallant, Marketing Manager, Microsoft Corporation

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– Gary K. Landry, Executive Vice President, Electronic Commerce, ECWerks, Inc.

Applications are currently being accepted for The Internet Open in Boston, March 24-26, 1998 and Los Angeles, September 23-25, 1998. For information, access our website at www.idg.com/ice or, call Andrew Burrell, Program Manager at The Internet Open HOTLINE at 508-820-8603.

EASY ACCESS

More important than the product's integrated development environment is the easy access to existing enterprise data. IBM has addressed this well with the Data Access Builder, which helps you read a remote database's schema and creates a bean that can read and manipulate the database. For example, you can pull the bean into a visual application and use its methods to populate the database or retrieve information from the database.

Java comes in two distinct flavors: applets, which can't access the file system, and full applications, which have no such restrictions. Remote users execute applets within their browsers. Applets communicate with applications running on servers that can access the database. VisualAge for Java comes with all of the pieces to easily enable that communication and database access, once the learning curve is put aside. Other Java development environments are more difficult to use or require expensive third-party database access products.

For this review, I created a simple ODBC-based database of inventory items with item number, quantity on hand and item price. The database resided on my server. Access to the database was via a Remote Method Invocation (RMI) bean proxy, created by VisualAge for Java's RMI Access Builder. Think of a proxy as an application interface to the database, either local or remote.

The easy-to-use RMI builder created both the client and the server proxy stubs and skeletons, which I then used in the Visual Composition Editor to create a simple client front end, allowing for examination and manipulation of the database in a cashier-like fashion.

The Visual Composition Editor gets high marks for its power and ease of use.

It took almost three days to learn the rudiments of VisualAge Java, and it took almost four days to get the testing application working. Those were programmer days of about 14 hours each and involved working through the weekend with the telephone off the hook. □

Greenberg is a reviewer and developer in New Kingston, N.Y. He can be reached at greenber@rammet.com.

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Briefs

Struggling with E-mail

▸ *Lack of tools leaves IS helpless to prevent problems in mail nets*

By Barb Cole-Gomolski

ELECTRONIC MAIL has become a critical part of corporate computing, but most popular client/server systems offer precious few management tools. Today's distributed E-mail networks are difficult to administer, and it is hard to fix problems before they bring a system to its knees, according to users struggling with the problem.

"There are a lot of approaches to E-mail management, but the most common is to wait until [an end user] calls with a problem and tackle it with manual tools," said Charles Hebert, president of Southernview Technologies, Inc., a Kennesaw, Ga., consultancy. Hebert said a better approach is to implement a management system that detects errors ahead of time and corrects routine glitches.

CLOSER LOOK
E-mail management

Many companies manage E-mail using extensions to network management frameworks. That approach worked for United Services Automobile Association (USAA), an auto insurance company in San Antonio that uses an add-on module for Patrol from BMC Software, Inc. in Houston to manage its 3,000-user Lotus Notes network. The Patrol management software enables USAA to detect Notes server outages or delays in E-mail delivery. Patrol also lets the company manage servers and applications, including E-mail, from one console, said Ben Marshall, a programmer at USAA. Another benefit is that USAA can continue to use Patrol when it migrates to Microsoft Corp. Exchange later this year, because BMC makes a Patrol add-on for that mail system, too.

Other users are moving to mail backbones based on Simple Mail Transfer Protocol (SMTP), which will let them reduce administration by consolidating on highly scalable SMTP servers that can handle thousands of users.

E-mail, page 52

Making policy for the network

By Patrick Dryden

BY THIS TIME next year, users of management tools from Boole & Babbage, Inc. should be able to apply policies that govern overall system, network and application operations from a business perspective instead of scripts that respond to individual situations.

Currently, almost 500 corporations and telecommunications providers run the vendor's Command/Post and Max/Enterprise servers. These filter thousands of alerts from diverse devices, correlate the key events and then take some predefined action.

DESIRED-STATE MANAGEMENT

Boole & Babbage in San Jose, Calif., seeks the next level in automated response, called desired-state management. With it, one policy could describe all adverse conditions and steps required to keep the entire sales system available during business hours, for example.

Many management software vendors are pursuing that goal, but Boole & Babbage is the first to really address the challenge for distributed client/server systems, according to Paul Mason, an

Management, page 52

Cisco to give routers firewall features

ERIC MILLETTE

By Bob Wallace

SECURITY-MINDED information systems managers with Cisco Systems, Inc. routers soon will be able to fortify their enterprise networks with a new software-based firewall add-on.

The introduction of the new router software option marks the beginning of Cisco's plans to transplant security features found in its high-end standalone firewalls into its many router lines.

Security is especially important at the midrange and low end, because hackers often try to enter central sites through remote offices, where there is

Cisco, page 52

Microsoft updates gateway

▸ *Users give faster, more secure Proxy Server good marks*

By Laura DiDio

EARLY USERS are giving Microsoft Corp.'s newly released Proxy Server 2.0 high marks for providing secure, fast Internet connections and slashing their leased-line costs by as much as 40%.

Proxy Server 1.0, which runs as an application on Windows NT Server, has been shipping since last October. It is aimed at small businesses and large organizations with many remote offices.

Proxy Server sits between a firm's intranet and the Internet, acting as a secure central gateway for multiple users. Rather than connecting to a World Wide Web site each time a user requests it, Proxy Server caches the most frequently requested pages and returns that information to users on request. The new version caches pages more efficiently and can cache pages on multiple proxy servers, conserving bandwidth and extend-

Proxy Server, page 52

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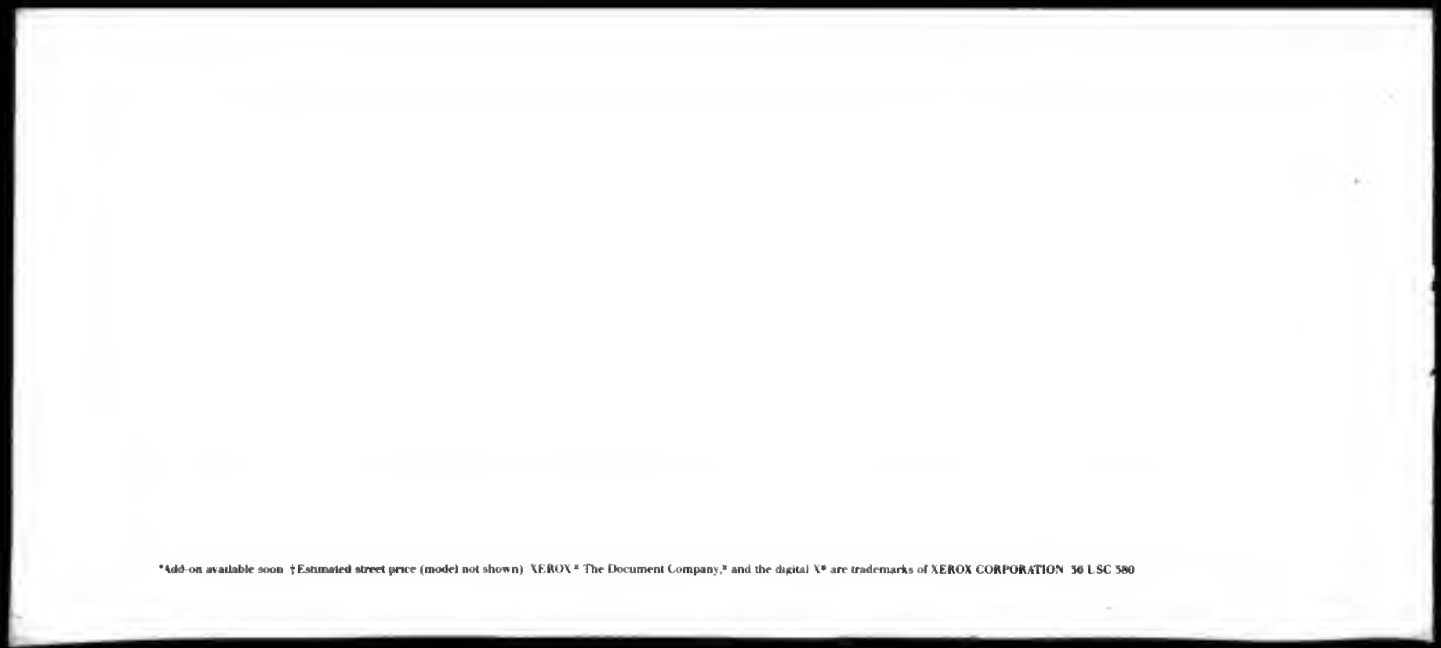

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E-mail

CONTINUED FROM PAGE 49

A recent study from Creative Networks, Inc. in Palo Alto, Calif., found that messaging systems based on Internet protocols are significantly less expensive to manage than client/server systems.

With an SMTP system, the average E-mail administrator can support 1,300 users, compared with 740 per administrator in the client/server world, the report said. Creative Networks also estimated that the average annual cost to administer and monitor an Internet mail system is $41 per user, compared with $69 per user for client/server systems.

Many companies manage E-mail using extensions to network management frameworks.

But good reporting tools are even rarer than management applications, users said. EMI Music in New York has supplemented its Lotus Development Corp CC:Mail network with third-party management tools but can't track a message over the Internet, said Patrick MacNamara, an E-mail administrator.

"It's pretty fundamental that you want to know the average time it takes to send a message from San Francisco to London or how many users are currently accessing a server," said Tony Redmond, a technical director at Digital Equipment Corp. in Stowe, Mass. That kind of information isn't easy to come by in client/server or Internet mail systems, he said.

Some messaging vendors are trying to address users' requests for better management tools. Novell, Inc. last month shipped GroupWise 5.2, an upgrade of its messaging and groupware server that includes a tool that monitors GroupWise message volumes and issues alerts if a server goes down.

Around the same time, Lotus shipped its Domino 4.6 upgrade, which includes a new capacity planning tool called Domino Server Planner.

And at the annual Microsoft Exchange Conference last month, the company's plans to reduce administration costs using a shared Exchange/Windows NT directory and automatic restoration of down servers was among the key themes of the conference. □

Third parties fill the gap

Because E-mail systems tend to be light on management tools, third-party software vendors often fill the void.

Candle Corp. in Santa Monica, Calif., and BMC Software sell add-on modules that tie Lotus Domino in to their applications management systems to automate administrative tasks and detect problems. BMC also offers an add-on to detect server outages in Microsoft Exchange networks.

Prices for these add-ons range widely, from several hundred dollars per server to a couple thousand dollars per server. Stoneham, Mass.-based Percussion Software, Inc.'s Notrix Spyder tracks and controls Web site traffic on Domino Servers, while Cambridge, Mass.-based Brainstorm Technology, Inc.'s Server-Admin Plus Enterprise does security audits, server and database management and performance monitoring for Domino.

In the Novell GroupWise arena, NetPro, Inc. in Scottsdale, Ariz., offers Mail Central for automatically correcting E-mail glitches on those servers. — Barb Cole-Gomolski

Management

CONTINUED FROM PAGE 49

analyst at International Data Corp. in Framingham, Mass.

Vendors that focus on specific aspects of desired-state management include Novadigm, Inc. for desktops and Sterling Software, Inc. for mainframes.

Enterprise management platform players, including Computer Associates International, Inc., Hewlett-Packard Co. and Tivoli Systems, Inc., seek broad service-level support through policies and business process views.

But because of complexity, users have limited these tool kits to a few functions so far — nowhere near their full potential, Mason said.

Boole & Babbage has promised to deliver its State Server sometime in the middle of next year with a common object repository and the ability to define, publish and subscribe to service-level policies.

"Be careful about assuming that policy-based administration will make our lives simpler," said user Don Southwell, a senior technical support analyst at Dow Corning Corp. in Midland, Mich. "Somebody will still have to know how to craft the 'if-then-else' statements to build policies and automation in the first place."

That's a "mind-boggling" task, with hundreds of routers and servers involved, Mason said.

"Anyone can collect event data and write scripts to react, but the hard part is creating service policies — deciding what the desired state should be, knowing which benchmarks properly measure conditions and then responding appropriately to maintain that state," Mason said.

Setup may be tough, but policies pay off later because managers can adjust them quickly as networks grow and evolve, said Robert Pisano, a system integration manager at Chicago-based Ameritech Corp.

"If you can't keep up with network changes, you can't meet users' and customers' needs," Pisano said. It is quicker to tweak facets of a general policy than to sort through several scripts, he said.

The State Server sounds promising, said Russell Guinn, a systems integration specialist at Shell Services Co. in Houston. "The bottom line is that we have to manage service levels, not just events."

In the meantime, users said they appreciate the first fruit of the new object-oriented architecture — Explorer, a graphical user interface to their existing Unix management servers that runs on Windows NT and extends access to any operator equipped with a browser. □

Proxy Server

CONTINUED FROM PAGE 49

ing the number of pages that can be cached.

At a list price of $995, Proxy Server costs less than firewalls, which provide greater security but range from $5,000 to $50,000 in price.

"I've been using the Proxy Server 2.0 beta for the last several months, and it solves some very serious problems for me," said Geoff Caras, information systems manager at Igneous Group, Inc., a management consulting firm in Santa Cruz, Calif.

Caras said he was pleased with the amplified protection provided by Proxy Server 2.0's Dynamic Packet Filtering, which automatically scans packets as they come into the server to ensure that only authorized users can enter the network through Proxy Server.

"Proxy Server 2.0 provides me with a demilitarized zone that isolates my network from hackers when my users access the Internet," Caras said. He also said Version 2.0 is more stable than its predecessor. "I had a bit of a rocky start with the earlier version; I experienced some system crashes. But the Proxy Server 2.0 release has been flawless."

Proxy Server does have limitations, though. Unlike more expensive stand-alone firewalls, it doesn't deliver sophisticated event statistics or audit tracking. And John Fiske, product manager at MediaOne, Inc., a broadband service provider in Boston, said he would be reluctant to use Proxy Server 2.0 as his business's sole firewall because it doesn't yet support the Simple Mail Transfer Protocol (SMTP). "And E-mail is by far our biggest use of the Internet," Fiske said.

Ross Lewis, an architect at an East Coast brokerage, said the firm uses the new reverse proxy/Web publishing feature, which creates an encrypted virtual private network connection across the Internet, to give remote offices access to the corporate network and to selected slices of the Web through Proxy Server.

Jerry Bishop, superintendent of the Lee County Public School System in Lee, Va., uses Proxy Server to give his 4,100 students Internet access via a single 256K bit/sec. leased line.

He also deploys it to block and restrict students' access to inappropriate or pornographic Web sites.

"Time is money. Proxy Server has let us reduce our bandwidth overhead by 40% and cut our monthly phone bills by two-thirds, from $30,000 to about $9,000 a month," Bishop said. □

Cisco

CONTINUED FROM PAGE 49

little or no security.

Integrated firewalls also mean "one less product to buy and manage," said Jim Fey, director of strategic projects at PMI Mortgage Insurance Co. in San Francisco. Users want much more security than is typically available in routers today so they can build virtual private networks and extranets, he said.

The Cisco Internetwork Operating System (IOS) Firewall feature set is a new software option for users of the company's low-end 1600 and midrange 2500 routers. IOS is akin to a router operating system.

The firewall features include: context-based access control, needed for secure per-application access to the Internet; Java blocking, which prevents the unintentional download of malicious Java applets, and denial-of-service detection, which identifies and protects the network from suspicious data packets.

The Cisco IOS Firewall feature set provides real-time alerts for attack detection and applications violations and a TCP transaction log to notify administrators of network bandwidth usage and unauthorized activities. "We use a 2500 between us and the 'net and want everything we can get," Fey said. "These features represent a ton of security."

Still, one analyst suggested users wait awhile to see how the firewall-router marriage goes.

"The jury's out," said Mike Zboray at Gartner Group, Inc., a consultancy in Stamford, Conn. "There's no acquittal and no conviction. I can't see passing judgment on this for at least six months."

Zboray contended that adding firewall capabilities to a router doesn't necessarily make the router completely secure because it is possible the box already had security holes that the firewall can't fix. "What Cisco should do is have an outside design team review what the Cisco engineers built to make sure there won't be problems down the road," he said.

Cisco officials said the company will seek National Computer Security Association certification for the software option after it ships.

The Cisco IOS Firewall features set option will be available for the Cisco 1600 and 2500 series routers in the first quarter of next year at $700 and $1,200, respectively. □

Software

Databases • Development • Operating Systems

Briefs

Simba data connection

Vancouver-based Simba Technologies, Inc. this week plans to announce an updated version of its server-based SimbaExpress database connectivity software that is optimized for use over the Internet and wide-area networks. SimbaExpress 2.0 adds built-in support for encryption and firewall technologies. Prices start at $495 per user. The software is due to ship this quarter.

Web supply chains

i2 Technologies, Inc. in Irving, Texas, is taking supply-chain management to the World Wide Web. The software maker is rolling out a new architecture for its decision-support software system. Users will be able to use Internet technology to access i2's software system. The software is used to coordinate factory floor activity and inventory levels based on project plans such as seasonal fluctuations in demand for a product. It will be available early next year.

Homemade vs. store-bought

Preferred data warehouse extraction and transformation tools and vendors:

Cobol and other manual programs	38%
SAS Institute	27%
Platinum Technologies	14%
Prism Solutions	10%
Constellar/SQL Group	7%
Evolutionary Technologies	7%
Informatica	6%
Other	24%

Source: 1,200 data warehousing users in North America, multiple responses allowed

Source: Input, Inc., Mountain View, Calif.

Users get control of 'net software

By Gordon Mah Ung

WHILE THE software industry pushes for increased adoption of electronic software distribution, two vendors are introducing products they hope will address piracy concerns for developers and license issues for users.

Channelware, a business unit of Nortel, Inc. in Ontario, is proposing that independent software vendors use its software to "wrap" their software in a secure envelope that would require users to activate it through the Internet for each usage.

Rainbow Technologies, Inc. in Irvine, Calif., is proposing that independent software vendors also wrap their software using a product called SentinelLM. But SentinelLM would create a unique fingerprint based on the software and hardware configuration of a single machine and tie that information to an activation code. The code could be used only to install software on the fingerprinted machine.

Channelware's product — Electronic Software Authorization — also promises to let users rent software in increments, on a rent-to-own basis, or purchase it outright.

Channelware's Electronic Software Authorization lets users rent or buy applications via the Internet

Michael Gaffney, president of Learnsoft Corp. in Ottawa, who has been using Channelware software for about two months,

Users get control, page 56

ONLINE ANALYSIS

New OLAP tools expand users' reach

By Craig Stedman

USER DEMAND to analyze broader swaths of business data with multidimensional OLAP tools is prodding vendors into action.

Arbor Software Corp. this week plans to announce a more extensible upgrade of its Essbase online analytical processing (OLAP) database. Included are new features designed to ease the size limitations that can shackle multidimensional technology to small data sets.

The upcoming rollout follows moves by Arbor, Oracle Corp. and other vendors to let their OLAP servers run queries directly against relational databases [CW, March 10].

The goal is to let customers put the fast response times and complex analysis capabilities of multidimensional software to use in more applications.

Some users like what they are seeing. For example, Mortgage Guaranty Insurance Co. in Milwaukee has cut the time it takes to build multidimensional data

New OLAP tools, page 56

Monitoring mixed apps

Software keeps eye on Win NT/Unix shops

By Jaikumar Vijayan

GUESSING IS a hard thing to do.

Especially when you have to figure out exactly how much computer power you need to run your mix of Windows NT and Unix applications.

Or when you need to know just how much of your hardware is being underutilized and how much is being pushed to the limit.

Waltham, Mass.-based BGS Systems, Inc. this week will unveil a capacity planning and performance management tool that aims to let users do the job with a little more accuracy in mixed Unix/NT environments.

The company's BEST/1 for Distributed Systems is the latest in a handful of products that offer corporations a way to monitor widely dispersed and heterogeneous platforms for performance and capacity bottlenecks.

A slew of fast-growing business applications such as electronic commerce, data ware-

Monitoring, page 56

BEST/1 for Distributed Systems watches dispersed and mixed platforms for performance and capacity bottlenecks

Microsoft's architectures

- Object Linking and Embedding (OLE): desktop architecture
- Component Object Model (COM): OLE souped up for the Internet
- DCOM: distributed COM for the network
- COM+: COM with middleware capabilities

Microsoft throws a COM curve

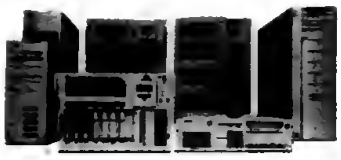
By Sharon Gaudin

COM+, MICROSOFT CORP.'S new architecture for carrying data between object-oriented applications, has developers and analysts wondering how it will affect component reuse and how it will mesh with its popular predecessor, COM.

COM+, which doesn't have a release date, is being billed by Microsoft as a souped-up version of Component Object Model (COM), Microsoft's desktop architecture.

COM+ is expected to provide added transaction and security

Microsoft, page 56



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New OLAP tools

CONTINUED FROM PAGE 53

"cubes" by as much as 80% during beta testing of the new Essbase 5.

Support for doing OLAP calculations on the fly, rather than having to build and store them ahead of time, also reduces the amount of disk space that Essbase needs, said Kevin Skelton, a senior programmer/analyst at Mortgage Guaranty.

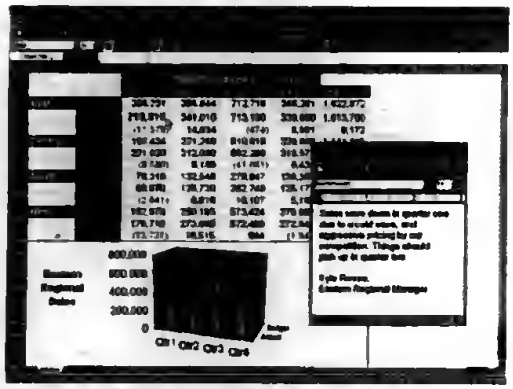
That frees up both room and time to fit in more data.

"Before, we were strictly limited in the amount of data that we could cram into a cube," Skelton said. "But now, we can just pour in more of the information that our users are requesting. It really opens up the possibilities."

Multidimensional servers have been able to handle only about 30G bytes of data before becoming unwieldy, said Robert Moran, an analyst at Aberdeen Group, Inc. in Boston. But vendors such as Arbor "are being forced to go toward larger databases because that's what their customers are after," he added.

Besides supporting on-the-fly calculations, Essbase 5 will let users partition OLAP applications across multiple systems.

Oracle, in Redwood Shores, Calif., said its Express OLAP server already supports both of those features.



Essbase 5 will let users partition OLAP applications across multiple systems and then run queries against all the data

COMING SOON

Essbase 5 is in beta testing now and is expected to ship late this year or early next year. Arbor, in Sunnyvale, Calif., didn't disclose pricing.

One potential drawback is that doing OLAP calculations on the fly could increase the response times end users get from prebuilt calculations.

Skelton and fellow Essbase 5 beta tester George Trudel, a business and technology consultant at Blue Cross/Blue Shield of Rhode Island in Providence, both said the differences have been too small to notice so far.

But response times could be affected more by large amounts of data or complex queries, said Robert Craig, an analyst at Hurwitz Group, Inc. in Framingham, Mass. "You don't want to have an end user sitting there drumming his fingers." □

Monitoring mixed apps

CONTINUED FROM PAGE 53

housing and enterprise resource planning are blowing the lids off the servers that run them.

Performance and capacity management tools help corporations in such situations contain unnecessary upgrades and migration costs, use their hardware resources better and improve performance by pinpointing bottlenecks.

JC Penney Co. has saved "millions of dollars" in unnecessary upgrades, because it has been able to track crucial performance indicators on its mainframe and distributed platforms using software from BGS and other companies, said Barry Hicks, manager of capacity planning at JC Penney in Dallas.

"The primary goal is to focus on how our resources are being consumed and whether they are being consumed efficiently or not," Hicks said. The company has more than 1,000 Unix servers and 2,000 NT servers.

KEEPING TRACK

BEST/1 allows capacity planners in mixed environments such as JC Penney's to track things such as daily performance of selected servers; predict long-term performance; predict the impact of upgrades or new hardware; and zero in on performance problems.

At a basic level, intelligent agents on Unix and NT servers collect key performance information from a variety of sources, including the CPU, I/O, network, the database and application data. The information can then be used by planners for predictive and "what-if" analysis.

NEW ARENA

Capacity and performance management tools such as this have been available for years in the mainframe arena. But they are still relatively new in the Windows NT server space. Apart from BGS, Candle Corp., Tivoli Systems, Inc., Hewlett-Packard Co. and BlueCurve, Inc. also offer capacity planning software for Windows NT environments.

Many systems management software tools from companies such as Tivoli and Computer Associates International, Inc., also offer varying degrees of the same capability.

"The difference really is in the degree to which you are able to drill down for information," said John Webster, an analyst at The Yankee Group in Boston. "There are all kinds of tools out there that alert you if there is a fault or when things aren't working properly. But you got to also have a way of analyzing all this information and projecting it out into the future," he said. □

Microsoft throws curve

CONTINUED FROM PAGE 53

services. It uses inheritance, in which basic features in base classes are automatically passed on to subsequent applications.

"There are a lot of questions for all the developers who have been using COM for years," said Fima Katz, chief technology officer at Concorde Solutions, Inc., the information technology division of San Francisco-based Bank of America Corp. "Adding inheritance will definitely change things. How [it will] is a very good question I'd like to get answered. It's just not clear."

COM and its distributed cousin, DCOM, both use aggregation, instead of inheritance. Aggregation means that nothing is automatically passed on to other objects unless those features are individually specified. Aggregation and inheritance are, both in mind-set and technique, opposite each other.

"When you're doing object-oriented application development, you want to use the same object model," said Karen Boucher, director of The Standish Group International, Inc. in Dennis, Mass. "Aggregation and inheritance are two different views of how you build objects. It's very difficult to switch back and forth because it's different modes of thinking."

"There are a lot of questions for all the developers who have been using COM for years."

– Fima Katz, Concorde Solutions

Boucher said she isn't sure how difficult that might be for developers because Microsoft hasn't released the specifications for COM+ yet. But she did say that adding inheritance capabilities should make it easier to improve component reuse.

Mike Schinkel, president of Xtras, Inc., an Atlanta-based component reseller, said he is glad Microsoft is turning to a greater amount of inheritance because it will make it easier to reuse components.

NO CODE IS EASY CODE

"The easiest code to maintain is the code you don't have to write," he explained. "Aggregation means you have to write code all the time. Inheritance means you write code upstream, and it's automatically taken control of downstream."

Schinkel and Boucher said that adding inheritance makes COM+ much more similar to its architecture rival, Common Object Request Broker Architecture (CORBA).

CORBA is based on inheritance. "Inheritance has always been held up as a tenant of object programming," Schinkel said. He said COM+ may now be closer to CORBA than to COM and DCOM. "That's obviously one of the reasons they're doing this. They want to support inheritance so they can tie in to CORBA better," he said. □

Users get control

CONTINUED FROM PAGE 53

said the model allows a phenomenal amount of marketing information to be collected — including when and where a customer uses the product.

Both companies are aiming their products at developers but said the systems could help large information systems shops because they promise to automate much of the process of license management.

Jeffrey Tarter, editor of the industry newsletter "Softletter" in Watertown, Mass., said Channelware's approach makes sense, but pricing will be a key factor in usage-based models.

"We all laughed that we wouldn't pay to use our word processor on a rental basis, but imagine if the rental price were 10 cents a day or a dollar a day. I'd dump [Microsoft Corp.'s] Word in a shot," Tarter said.

Other analysts weren't so kind. "I'm a little suspicious of the rental software craze," said Steve Weissman, president of consultancy Kinetic Information, Inc. in Waltham, Mass. "The notion of rental software is an interesting idea. It seems to me if people have an ongoing need for software, they buy it."

Channelware's conversion program is free. The company charges $25,000 for the server software and $1,000 for each title to be authorized. It also takes 10% of each transaction.

Rainbow Technologies will add the Internet activation module to its SentinelLM 5.0, which is already available. The Internet module will be unveiled next month at Comdex/Fall '97 and is available to developers starting at $4,995. □

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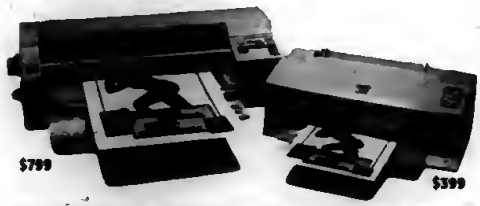

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Briefs

Percentage of PCs with embedded manageability

1996 4%

2000 37%*

*Projected

Source: International Data Corp., Framingham, Mass.

Hospital revives old PCs, cuts costs

By April Jacobs
LOWELL, MASS.

LOWELL GENERAL HOSPITAL is turning some of its older PCs into brand-new thin clients.

The move is part of an overall systems revamp intended to provide new medical and administrative applications while keeping costs down.

Lowell General will save at least $200,000 on what would have been a major purchase of new hardware.

Chief Information Officer Ed Bianco said he plans to have the thin clients up and running within the next 60 to 90 days. He added that the hospital will save at least $200,000 on what would have been a major purchase of new hardware — at between $800 and $1,000 a pop. Most of the older PCs are 386-, 486- and Pentium-based PCs.

Bianco said he plans to reuse about 300 PCs for the project — about 20% of Lowell General's overall PC inventory.

Turning the PCs into thin clients would require only the addition of some software that will let them link to the server and run applications from it. So instead of adding the new applications directly to each PC, the PCs will

Hospital, page 64

MARC DANOUS

IBM boosts notebook drive to 8G bytes

▸ *Increased storage ahead of user demand*

By Nancy Dillon

IBM HOPES to entice notebook PC power users with a new 8G-byte hard disk drive. Before now, the industry's highest-capacity notebook drive was IBM's 5G-byte Travelstar.

Ron Bernard, information systems manager at Ranpac Corp., a paper manufacturer in Painesville, Ohio, said IBM's Travelstar 8GS is ahead of its time. Bernard manages 15 notebooks and in the next year plans to roll out 30 more to remote salespeople.

"We may kick the idea of 8G bytes around by the end of 1998, but currently, we don't require something so large," Bernard said.

Ranpac's notebook data includes text documents, spreadsheets, contact databases and a few sales presentations. Bernard said his users' 2G-byte drives are sufficient. "I would have a concern with backing up all 8G bytes on a regular basis," he said.

But Crawford Del Prete, an analyst at International Data Corp. in Framingham, Mass.,

8G-byte drive, page 64

SCALABLE SYSTEMS

HP tries to lead way with 8-way server

HEWLETT-PACKARD CO. is getting ready to ship an eight-way Windows NT server based on Intel Corp. architecture. The server should be released by year's end. The announcement puts HP, in Palo Alto, Calif., among the leaders in the race to deliver highly scalable symmetrical multiprocessing systems based on Intel technology.

Such servers are expected to give users the expandability required to run large, rapidly growing applications — such as data warehouses — on Intel servers. Other vendors working on delivering similar systems include Compaq Computer Corp. in Houston, which is using scalable technology from Corollary, Inc. in Irvine, Calif., to build an eight-way server.

And NCR Corp. in Dayton, Ohio, is using its own technology, called Octascale, to tie two four-way servers into an eight-way Intel box.

— Jaikumar Vijayan

IBM midrange to get copper chips first

By Tim Ouellette

IBM OFFICIALS said AS/400 and RS/6000 shops will be the first to gain from Big Blue's development of copper-based semiconductors.

The new copper process, which IBM announced last month, promises performance gains and manufacturing savings over current chip methods, which depend on aluminum in the semiconductor's circuitry.

IBM'S CMOS 7S CHIP TECHNOLOGY

Frequency: Up to 1 GHz

Size: 0.20 microns wide (500 times thinner than a human hair)

Transistors: Will be manufactured by the middle of next year

Systems: Will be used first in RS/6000 and AS/400 systems

Before PC systems get the high-powered chip, those gains will first target IBM's business server line starting late next year, said Vijay Lund, IBM's director of PowerPC development. Mainframes will follow close behind, Lund said.

Copper chips, page 64

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8G-byte notebook drive beats users to punch

CONTINUED FROM PAGE 61

said backup fears shouldn't be a deterrent.

"I can understand the trepidation, but there are plenty of tape products that can do the job efficiently," he said.

STORAGE POTENTIAL

Del Prete said IBM has released the drive ahead of user demand as a way to differentiate its products in a fiercely competitive market.

"Users won't move en masse to this new 8G-byte drive, but it's a snapshot of the future." He predicted that notebook users will migrate to 2G-byte drives by the beginning of next year, to 5G-byte drives by mid-1999 and to 8G-byte drives in the first half of 2000.

Multimedia presentations, office suites, electronic mail and reference materials are driving that migration, he said.

Dave Hill, IS manager at CRSS Constructors, Inc. in Denver, said an 8G-byte drive means more options for him. Hill manages 150 notebooks at his commercial construction and engineering company.

"I don't see us standardizing on 8G-byte drives soon, but it's nice that one is available for maybe a superpowerful notebook that could hold an entire project's [computer-aided design] drawings," Hill said.

DISK DRIVES FOR NOTEBOOKS

Vendor	Product	Capacity	Height
IBM	Travelstar 8GS	8.1G bytes	17mm
	Travelstar 3GN	3.2G bytes	9.5mm
Hitachi	DK226A-32	3.24G bytes	12.7mm
Fujitsu	MHA2032	3.24G bytes	12.5mm
Toshiba	MK-3003MAN	3.08G bytes	19mm
	MK-2103MAV	2.16G bytes	12.7mm
Seagate	Marathon 2130SL	2.1G bytes	12.5mm
Western Digital	WD Portfolio	2.1G bytes	10.5mm

It would save Hill from having to ship a desktop computer-aided design workstation to a client site when the assignment is only short term, he said.

IBM's competitors currently ship notebook drives that range from 2.1G bytes, in the case of Western Digital Corp. in Irvine, Calif., to 3.24G bytes, in the case of Hitachi Ltd. in Tokyo.

One in four notebooks worldwide ships with an IBM disk drive, Del Prete said.

Notebooks from IBM, Dell Computer Corp., Gateway 2000, Inc. and Micron Electronics, Inc. are expected to offer the 8G-byte drive in December.

The drive's list price is $649. □

IBM midrange to get first crack at copper chips

CONTINUED FROM PAGE 61

The AS/400 and RS/6000 have recently suffered slack sales and low growth. They are in the middle of major product transitions and face tough competition from Windows NT.

BREAKING THE CEILING

The new approach, called CMOS 7S, uses copper because it conducts electricity better than aluminum. That gives the chip better performance and allows it to handle the higher demands of future applications. Industry watchers said aluminum has almost hit the ceiling for future performance gains.

With copper, IBM can provide servers with the following:

- More system functionality on the chip itself vs. that usually found in software.
- Clock speeds of up to 1 GHz compared with today's 200- to 300-MHz speeds.
- A lower power requirement of 1.8V. Other PowerPC chips require a 3.3V.

The AS/400 and the RS/6000 both received 64-bit chip upgrades this fall. Another chip upgrade, called Power3, is slated for next year. The Power3 then will be updated with the copper technology later next year.

Some users are happy enough for now with the current 64-bit offerings.

"We don't expect to run out of headroom with the AS/400," said Rick Flagler, MIS director at MPB Corp. in Keene, N.H. The bearings manufacturer, with 900 employees, runs its business on a uniprocessor AS/400 Model 620.

But the copper technology will help IBM stick to its promised 70% annual performance gains.

And analysts said more users are beginning to consolidate smaller AS/400s into larger machines, that require more power than when the systems were used for departmental applications.

GOOD TIMING

The timing also is right for IBM's mainframe systems.

IBM's 63-MIPS mainframe CMOS processors currently are running into stiff competition from the powerful Skyline systems from Hitachi Data Systems Corp. in Santa Clara, Calif. Skyline's processor is a combination of air-cooled (CMOS) and water-cooled (bipolar) technology.

Additional competition is expected next year from Commercial Data Systems in Sunnyvale, Calif., where mainframe pioneer Gene Amdahl hopes to develop a 160-MIPS supercooled processor [CW, Aug. 18].

In the meantime, IBM's copper chip "gives us capability to get faster cache," said Kyle Vanleek, an IBM S/390 product development team leader. "And there will be a point in time where air-cooled CMOS takes the lead over bipolar technology [such as Skyline], and copper will allow us to do that," he added. □

Hospital revives old PCs

CONTINUED FROM PAGE 61

be able to run the new applications from a server. That is what changes the recycled PCs into thin clients.

"If I can give users the applications they need and not sacrifice on the performance, the answer is easy," Bianco said. He said most of the users who will get the thin clients will have access to applications through Microsoft Corp.'s Office suite as well as electronic mail and browsers to use the company's intranet.

Bianco plans to use WinFrame software from Citrix Systems, Inc. in Fort Lauderdale, Fla. WinFrame allows users to access PC applications that run on the server. Depending on the model of the computer, some applications such as E-mail may run locally, he said. Users will have the same Windows interface they have had all along, he added.

Analysts said implementations such as Lowell General's are smart business, because they afford PC users access to up-to-date applications without having to go through costly hardware upgrades.

"This makes perfect sense for a lot of businesses today who have users who need access to new applications but may not be able to turn around new hardware," said John Dunkle, president of Workgroup Strategic Services, Inc. in Portsmouth, N.H.

Lowell General is ahead of the curve in recycling PCs into thin clients, but the opportunity is there for other companies to do the same, Dunkle said.

The only major drawback can be that running applications from the server requires more network bandwidth — and a very reliable network.

Luckily, Lowell General has both; it recently moved to a switched Asynchronous Transfer Mode network and currently uses only about 1% of the bandwidth available to it.

Dunkle said PC productivity applications run well in a setup such as Lowell General's, but he warned that users who want to run CPU-intensive Java applications will need more processor power locally than older PCs can provide in some cases. □

NEW PRODUCTS

E.COM INTERNATIONAL, INC. has announced Discovery, a smart handheld device with wireless capability.

According to the Beaverton, Ore., company, the PC device includes a wireless modem, battery management hardware that allows up to 30 hours of use and access to the Internet via Motorola, Inc.'s worldwide DataTAC network. The pen-based unit includes Windows 3.1 and a built-in keyboard.

It was designed to let remote users access files and databases, send and receive electronic mail and send faxes.

Hardware costs $1,400 to $2,000, depending on configuration.

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INTERGRAPH COMPUTER SYSTEMS has announced ExtremeZ Graphics Workstations, a line of Pentium II-based workstations that run Windows NT.

According to the Huntsville, Ala., company, the NT workstations can read and write to any Macintosh-formatted media and can connect with Macintosh systems via AppleTalk.

Features include single or dual 300-MHz Pentium II processors, up to 512M bytes of dynamic RAM, eight Peripheral Component Interconnect expansion slots and up to 26G bytes of disk storage.

Adobe Systems, Inc.'s PhotoShop and Quark, Inc.'s Quark XPress are included with the workstations.

Pricing for the workstations starts at $10,000.

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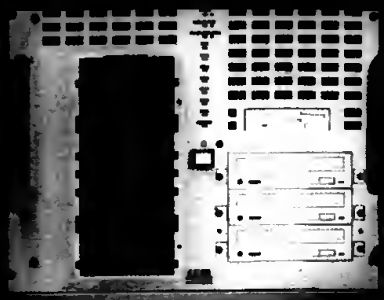

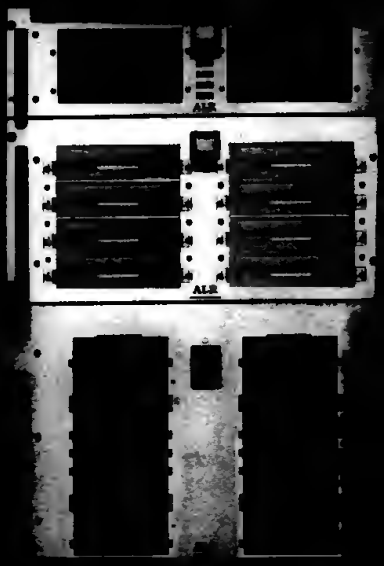

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Briefs

Telecommuting lab eases trip home

▸ *Merrill Lynch simulates home office environs*

By Kim Girard
SOMERSET, N.J.

ON A RECENT Monday afternoon, Jerry Setzer, a programmer in Merrill Lynch & Co.'s voice-response system department, dialed in to the corporate network to remotely download files.

TELECOMMUTER TRAINING

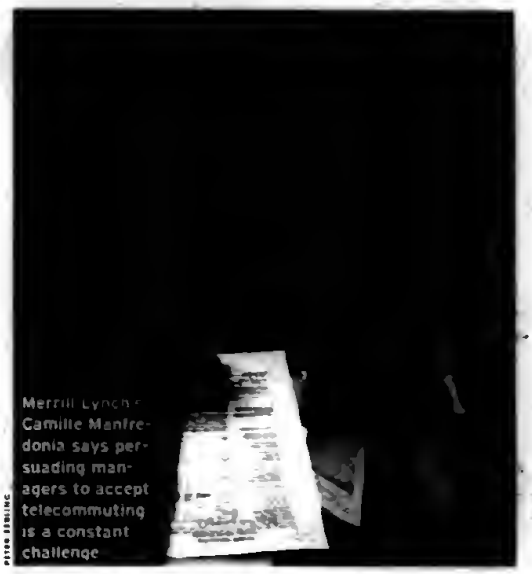
No, he wasn't working from home yet, but he soon will be.

Setzer is in telecommuting boot camp, a two-week training session in which a lab setup simulates his home office environment.

Like many of the 400 telecommuters at Merrill Lynch, Setzer aims to improve his productivity and cut his two-hour daily commute by telecommuting several days a week.

"The office is so hectic, so I don't get to work on my normal work," Setzer said. At home, "I can work strictly on projects and better meet deadlines."

The lab looks no different than most offices in the building. But for employees, it is a disconnected island away from their departments where they learn to work as if they were out of the building.



PETER DERLING

Merrill Lynch's Camille Manfredonia says persuading managers to accept telecommuting is a constant challenge.

TRIAL RUN

They test the remote access software they will use to connect to the corporate LAN, work with programs they will need at home and figure out what files, supplies or equipment they will need to bring with them.

About 60% of Merrill Lynch's 400 telecommuters are from the private-client technology group, which provides technology support to internal financial consultants. The group also helped spearhead telecommuting within the organization two years ago.

"We felt it would improve our position as an employer of choice," said John Burstler, chief

Telecommuting, page 72

IS 'town hall' broadcasts a big hit

▸ *Far-flung staffers remain in the loop*

By Julia King

LYNN PATRICK and her 13-person information systems staff at Georgia-Pacific Corp.'s Leaf River Pulp Operations work in a remote corner of Mississippi, hundreds of miles from the paper giant's headquarters and corporate IS group in Atlanta.

Even the closest pizza shop to her work site in New Augusta, Miss., is almost an hour's drive away.

But thanks largely to IS "town hall" broadcasts initiated recently by Chuck Williams, the company's vice president of information resources, Patrick feels as in the loop about Georgia-Pacific's business goals and IS strategy as any Atlanta-based IS manager.

Patrick is equally knowledgeable about who sits on the senior IS management team and how they view their roles. And although she has never met him in person, Patrick even knows what Williams looks like.

MORALE BOOSTING

"The town meetings are a real morale-booster," said Patrick, whose team makes a big deal of the quarterly satellite broadcasts by having pizza sent in.

Williams, who joined Georgia-Pacific in May, launched the meetings this spring as a cost-effective means to get acquainted with staffers in far-flung IS operations. The private satellite broadcasts, which last one hour and cost less than $10,000, reach some 350 sales offices, paper plants and other manufacturing facilities nationwide.

Georgia-Pacific's private satellite network

Completed: 1994

Reaches: 350 company locations

Cost: Broadcasts are usually less than $10,000, depending on the level of preproduction work

Per-viewer cost: $7 to $10

"Having somebody like Chuck Williams give his philosophy and lay out his positions — especially since he's new — makes us feel we're in the know," she said. "And that's very motivating."

Williams said he wanted IS workers to "get a feel for what kind of person I am" as the new chief information officer.

"My predecessor [Carl Wilson] was a very powerful, very

Town hall, page 72

Rules help keep laptop woes at bay

By April Jacobs

WHILE MORE companies turn to mobile computing to give users on-the-road and at-home connectivity, supporting laptops can be a headache unless they are managed at least as well as their desktop brethren.

In fact, users and help desk managers say most of the nightmares end users encounter arise from untested or rogue software loaded onto machines, bad drivers, undereducated users and networking problems.

AVOIDING THE PROBLEMS

By following some of the same information systems management practices that apply to desktop management, many of these road-warrior problems can be avoided, said Rob Enderle, an analyst at Giga Information

Laptop woes, page 72

The name of the game is Service. And the champ, revealed by a Computerworld
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Telecommuting lab eases transition

CONTINUED FROM PAGE 69

administrative officer of the private client technology division.

But Setzer, a senior member of his team who telecommuted at a previous job, said selling the idea to his manager was a bit of a challenge.

"His concern was that he may not get the same response from me as he had in the past, but I'm a phone call away," he said.

Convincing managers to accept telecommuting is a constant challenge, particularly when there is turnover within departments, said Camille Manfredonia, vice president of alternative work arrangements at Merrill Lynch.

It is for that reason her department brings a "road show" to various divisions each year to allay fears and educate managers about how telecommuting works.

BOOSTING SUPPORT

Manfredonia said internal surveys help boost support for telecommuting. Last year, managers' research showed that no telecommuters' productivity declined, but 45% of the group increased productivity.

Gil Gordon, a Monmouth Junction, N.J.-based telecommuting consultant, said Merrill Lynch's slow but sure commitment to telecommuting during the past several years puts the company in the top 20% of Fortune 500 companies that offer such programs.

"They're an old-line conservative Wall Street firm, and they have a three- to four-year history with telecommuting," Gordon said. "They're not the norm."

The company invests about $5,500 to provide a telecommuter with a PC or laptop/docking station as well as a telephone line, Integrated Services Digital Network line or frame-relay connection.

Last year, managers' research showed that no telecommuters' productivity declined, but 45% of the group increased productivity.

Employees who telecommute must fill out an application, participate in a two-hour educational session and iron out an agreement with their managers before simulating their work environment in the telecommuting lab. Employees are told to do what they need to do to get motivated in the morning, Manfredonia said.

DOING WHAT WORKS

"One guy takes a shower, gets dressed, goes to the store for a cup of coffee and goes back home to work," she said.

Employees with children at home are required to find child care and set up a separate office, equipped with a desk, proper lighting and a chair with arms and lumbar support.

Telecommuters also must submit photos of their home offices for approval and make changes to prevent work-related injuries. □

'Town hall' broadcasts a big hit for IS staff

CONTINUED FROM PAGE 69

charismatic leader, and he was very effective. I was concerned we'd lose a lot of people because of Carl's departure," Williams said. "So it was important for me to communicate — particularly in the first broadcast — that the transition was going to be OK."

> Before the town meetings, 'the rumor mill was the most effective means of communication.' – Rick Mountain, Georgia-Pacific

During the second broadcast in September, Williams said he focused much more on ongoing projects, including the implementation of SAP AG's R/3 software at two packaged products divisions; the company's year 2000 project; and a new, enterprisewide intranet-based human resources system known as Imprint.

QUESTIONS AND ANSWERS

Both town hall broadcasts included question-and-answer periods during which remote workers could call in with questions for senior management. In return, Rick Mountain, an IS manager at one of Georgia-Pacific's computer-integrated paper mills in Palatka, Fla., said he got straightforward information from those callers.

Before the town meetings, Mountain said, "the rumor mill was the most effective means of communication. Now, everybody on my staff who wants to can hear what's going on directly from the source, and not after it has been reinterpreted three or four times."

Especially useful was information about the governance structure of the IS organization, which Williams discussed during the first town meeting this past summer.

"It put people's minds at rest that there isn't just one person throwing out decisions for people to react to," Mountain said. "In the field, you can wonder where this stuff is coming from and who's making the decisions."

FOR THE FUTURE

Mountain also suggested more time for questions and answers during future broadcasts.

Judging from his viewer ratings, Williams' broadcasts are equally popular with Georgia-Pacific's other remote IS staffers and non-IS workers as well.

"We do a sort of homegrown Nielsen's survey on all of the broadcasts, and Chuck's numbers virtually doubled from the first to the second town meeting," said Don Blank, who directs the company's television and photography operations.

"And on his last broadcast [in September], we identified 43 locations that don't have IS employees but tuned in to watch anyway," Blank said. □

Rules keep laptop woes at bay

CONTINUED FROM PAGE 69

Group in San Jose, Calif.

For example, limiting the number of laptop brands and making sure that laptops have standardized, preloaded software eliminates support issues that might otherwise result in expensive service calls or time-consuming factory repairs.

At Genencor International Inc., a biotechnology firm in Palo Alto, Calif., most users are technologically savvy scientists. That greatly reduces the need for many kinds of help desk calls, said David Blakley, a computer systems manager at Genencor.

But even so, unexpected problems crop up. For example, a company policy at Genencor prohibits users from loading disk- and memory-hogging games, which can cause laptop failures.

Users and help desk managers say most of the nightmares end users encounter arise from untested or rogue software loaded onto machines, bad drivers, undereducated users and networking problems.

"We do have a standard preload, but it's happened in the past that users add [software] to it and not always for the better," Blakley said.

"We had a case where a user installed a game and rendered their laptop useless. They came to us saying we did a poor job of setting up the machine, but after taking a closer look, we found that the game had eaten up the entire hard drive," he said.

Blakley said because Genencor's scientists travel internationally, the company educates users about the power supplies and connections that are needed overseas. Hotels also are good sources of information for these questions. The company also encrypts files so they can't be read if a laptop is lost.

Blakley also advises that help desk staff and network managers keep the same hardware and software as road warriors, so they can duplicate problems users may be having and walk the users through a fix over the telephone if necessary.

Bruce Benham, chief information officer at Englewood, Colo.-based RE/Max International, Inc., said an increasing number of the company's 40,000 real estate agents in the U.S. are working from home and the road using remote connections.

Benham said many support issues arise because users aren't technically inclined. "Sometimes if they are on the road, it can be difficult to even ascertain what the problem is [so you can] walk them through it. So we try to have high-quality hardware and support. We always try to recommend an on-site service plan to all mobile users," Benham said.

Like other analysts interviewed for this article, John Dunkle, president of Workgroup Strategic Services, Inc. in Portsmouth, N.H., said users who want fewer headaches must pay attention to details, such as system drivers directing different laptop functions. Companies also should install a best-practices plan to solve recurring problems and reduce support costs over time, Dunkle said. "Laptops will always cost more to support than an average desktop, but if they're not managed, the cost goes up exponentially," he said. □

Mobile user firms can save time and money if they:

- **Standardize hardware and software to avoid problems with driver support and multiple versions of software and operating systems.**
- **Educate users about hardware and software.**
- **Avoid start-up problems by standardizing a preload of applications and operating systems.**

Take it from the top
Boards of directors should be key in IT business strategy, Jim Champy writes. Page B1

Managing

ROI

Tangled up in numbers? There are easier ways to measure the return on your company's IT investments — and they're gaining in popularity

By Joseph E. Maglitta

When it's time to pitch a major new system, Linda L. E. Reino doesn't spend hours with her staff agonizing over numbers.

"It's not a good use of my time," she says.

Instead, about a year before the project gets funded, Reino, chief information officer at Universal Health Services in King of Prussia, Pa., casually starts mentioning its benefits to key business unit heads at the 37-facility health care management company, along with ballpark costs. When budgeting time arrives, she avoids stacks of cost/benefit analyses.

"People spend a huge amount of time and energy on these up-front cost studies, and what do they get?" Reino says. She acknowledges that the approach is a far cry from standard practice at Andersen Consulting, where she spent 10 years before becoming Universal's CIO in 1992.

LAWRENCE MARSEGLIA

Linda Reino, CIO at Universal Health Services, doesn't like hammering out a bunch of numbers when pitching a major new system. She prefers talking about its benefits and giving ballpark cost estimates.

Indeed, until recently, such talk was unthinkable. But as companies shift their technology focus from back-office systems and cost-cutting to efficiency and growth, many are looking for new ways to gauge the costs and value of information systems. While total cost of ownership remains a hot topic, more organizations are skipping exhaustive spending projections in favor of speedy, "close-enough" approaches.

Growing numbers of consultants and academics echo Reino's belief. They say that use of return on investment (ROI) analysis — which in broad terms analyzes tangible benefits minus costs — still can benefit some information technology projects. But critics say such traditional accounting measures too often are time-consuming, ineffective and unnecessary. They argue that alternative measures such as "business value-added" and "intangible value" better acknowledge the imprecise and often unmeasurable benefit of IT.

Only about half of IT groups use ROI, estimates veteran consultant and former CIO Ron Brzezinski, a principal at Transformation Associates in Wilmette, Ill. Increasingly, companies view positive returns from intranets and other projects as givens. For example, a recent survey of network managers at 41 companies by Meta Group, Inc., a Stamford, Conn., IT research firm, found that most of them assumed that benefits would follow from projects.

Just as well, because IT metrics for lofty corporate goals — improving supply chains, revenue growth, customer satisfaction, quality or speed to market — are still in their infancy. A growing cadre of academics, practitioners and consultants continues to grapple with the best ways to describe "soft dollar" benefits of technology projects. Those benefits include improved communication, better customer service, improved access to information and public prestige.

The following three ROI alternatives can help you understand the choices. Although there are others, such as measuring internal rate of return and analyzing future scenarios, these common techniques illustrate the alternatives to evaluating IT investments.

BUSINESS VALUE-ADDED

Biggest difference from ROI: Measures IT contribution not in dollars, but by its support of key goals and metrics of functional groups.

Example: What was IS's role in helping boost sales 10%?

Works best when: You have strong high-level support, routine operations are under control and the business wants to grow. The key thing is to fuse IT efforts to important targets, then look at how well those targets were met.

Don't use when: You need short-term payback or in a heavily quantitative culture. The key is picking the best business goal.

Want a sure way of aligning business goals and IT? Judge the latter with the yardstick of the former. That's exactly what the Federal Home Loan Bank (FHLB) in Dallas did.

FHLB decided that the best way to meet federal mandates to cut costs and boost sales was to handle routine loan transactions via the Internet. In mid-September, the commercial lender unveiled a $5 million virtual private network. IT Vice President Nancy Parker says the project was a bulls-eye on key goals.

By year's end, all 200 member institutions will be able to get loans

Beyond ROI, page 77

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ROI yo

CONTINUED FROM PAGE 73

of up to $1 million in minutes instead of eight to 10 hours, Parker says.

If you're smart enough to pick a must-do project, you probably won't need much formal cost-justification. At FHLB, basic figures for consultants, developers and systems got easy approval from a 10-member technology oversight board. The same for the board of directors (which was already enthusiastic about electronic banking, Parker says).

A prototype helped clinch the deal.

The lesson here: Control expenses, but keep focused on the real goal.

One heads-up: Assessing IT's contribution to the goal is tricky. Parker is lucky.

For now, she and her 17-person staff will continue to gather statistics about the number, types and amounts of loans.

"I'm not sure we can put a dollar value on improved customer satisfaction," Parker acknowledges. But if business booms, she may not have to.

INTANGIBLE VALUE

Biggest difference from ROI: Intangible value is less a formal metric than an evaluation of "soft" benefits such as attracting new staff, improving product quality, enhancing company reputation, staying in the market and so on. More general cost and benefit statements can suffice; ROI looks for benefits that can clearly be measured in dollars.

Works best when: You have established credibility and enjoy executive support. But avoid in a heavily quantitative culture, and be careful to demonstrate benefits your company values.

Warning: If you go this route, you'll still need to keep an informal eye on payoffs and report success regularly.

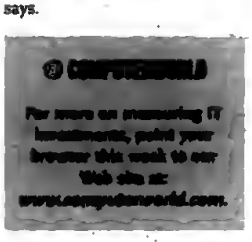
"Plant the seeds early on to create the excitement you need to make this approach work," Reino advises. "Say something like 'You know, down the road you need to look at imaging.' "

Straight talk is crucial, she adds.

Last year, for example, the vice president of Universal's acute care division wanted to put records management in key hospitals.

After estimating the cost of each system at "six figures," Reino says, "you will not see an obvious ROI."

That makes it even more important to identify "soft" payoffs without going crazy measuring, Reino says. In this case, the hospital felt modern records systems could help retain and attract new staff and patients. "You need these systems just to stay competitive," she says.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www.computerworld.com.

Because it lacks many hard numbers, the "intangible" approach depends even more on widespread buy-in. "Step 1-A," Reino says, is gaining top management's approval. Also, involve multiple business units in vendor selection and piloting.

Combined, they're the only way to blunt griping and sniping. The approach helped get approval for a multimillion-dollar project for companywide electronic mail and Lotus Development Corp. Domino servers.

After the first pilot, keep gathering anecdotal evidence about benefits. In this case, easy records access lured four new physician groups to Universal.

"At this stage, you can say, 'I can prove the value shown here on a large scale in 18 months.' If you've done it right, they'll already be champing at the bit."

NET PRESENT VALUE

Difference from ROI: Net present value (NPV) gauges tomorrow's returns in today's dollars. Although some disagree if it's a subset of ROI or an alternative, NPV accounts for realities that ROI doesn't. For example, it acknowledges that a 1997 dollar isn't worth the same as a dollar in 1987 or 2007. It also recognizes that returns from an investment vary year to year, depending on business conditions, interest rates, risk and inflation.

When and how to use: Fans say NPV can be used anywhere ROI can. To do so, you'll need top management to make it the norm in corporate culture. It's also important to avoid being overprecise: You want strong ballpark figures because figures change at every stage of the project as the value of money and the rate of return change. Do it right, and NPV can work for any technology project.

A company that plans to grow from 200 workers to 10,000 in five years can best rely on an IT metric that excels in focusing on the future.

At Commercial Financial Services (CFS), the nation's largest collector of unrecovered debt, that means using NPV, according to Chris Horrocks, CIO of the Tulsa, Okla.-based company.

Like ROI, NPV assesses potential payoffs.

But its strength lies in seeing future dollars in current terms.

"You look out over time at the net gains or losses year by year," he explains. "When you try to compare two such projects, you discount the rate back to the present. It's nicely normalized."

Doing so directly reflects the economic gain and lets you factor in a project's opportunity cost (the money you could have earned if you had chosen to pursue other projects instead of the one you chose), he says.

The approach, used universally at CFS, works well for gauging cost-avoidance through other alternatives or strategic and market-driven gains.

Horrocks, a veteran consultant who became CIO in February, says NPV works well for gauging cost and strategic gain.

CFS just used the measure on a $10 million national data warehouse.

The project, which debuted Oct. 15, will yield net profits of "nine figures" over the next five years, according to Horrocks.

"If you don't drive a data warehouse specifically against a planned economic agenda, it will fail," says Horrocks, who previously headed CSC Consulting's data warehousing practice. "If you don't drive every systems initiative against an economic agenda, you get sloppy."

Horrocks says that perhaps the biggest challenge of NPV is persuading managers to loosen up. "Most systems people are brought up in operations, where dotting the i's and balancing the t's is crucial," he says.

"But as Warren Buffett says, 'It's far, far better to be approximately right than exactly wrong,' " Horrocks says. □

Maglitta is a freelance writer in Cambridge, Mass. He can be reached at jmaglitta@earthlink.net.

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RESOURCES: IS MANAGER'S BOOKSHELF

Virtual Teams: Reaching Across Space, Time, and Organizations with Technology

By Jessica Lipnack & Jeffrey Stamps; John Wiley & Sons, Inc., New York; 262 pages; $28 (hardcover)

Are you virtual yet? Like it or not, plenty of information systems staffers are finding themselves on teams or task forces whose members are strung out across the continent or the globe. Here's a book for some of you.

Virtual Teams is written by the very un-virtual husband-and-wife team of Lipnack & Stamps, who run a consultancy in Newton, Mass., called The Networking Institute and are the authors of two previous books on networked organizations, *The TeamNet Factor* and *The Age of the Network*. Few people have looked so closely and written so clearly about teams and organizations connected by information technology and what makes them successful.

Those are the virtues that make *Virtual Teams* a helpful book for leaders of virtual teams. Lipnack and Stamps define the concept, describe what makes them tick and detail what's needed to successfully start and sustain them through their life cycle.

The book is exceptionally well-organized; you can read it on a transcontinental flight.

But if you're an IS staffer who's been put on a team and is looking for some practical advice, you'll find little of what you need.

The authors don't discuss any IS examples or the role of IS people in virtual teams. They provide an overview of the technologies used by virtual teams (the bottom line: you need all the media, from the World Wide Web to telephones), but you don't learn what it's like to work with these technologies from an IS perspective.

The case studies are interesting, but they're so dominated by the manager's perspective and sound so peachy-keen you wonder if the authors have ever read a "Dilbert" comic strip.

And the authors have an annoying habit of delving into anthropological speculations and historical tangents.

My advice: If you're leading a team, buy the book and skim through most of it (using the handy pull-out quotes), and slow down for the case studies and Chapters 5 through 8 (which get into the people and management issues). But don't make it mandatory reading for the rest of your team.

For more information, check out the authors' Web site, *www.netage.com*. — *Allan E. Alter*

Electronic Commerce: A Manager's Guide

By Ravi Kalakota and Andrew B. Whinston; Addison-Wesley, Reading, Mass.; 431 pages; $26.85 (paperback)

The well-done, clear charts will allow any business manager to understand the jargon thrown around by his own IS group or an outside Internet service provider.

In the second half of the book, the authors do the same comprehensive — and comprehensible — job of explaining the business side of Web commerce. Rather than lapse into generalities, they explore how and why electronic commerce might work in seven specific areas, ranging from banking and retailing to supply-chain management.

Just as they did with the technical issues, the authors go into impressive detail explaining the buzzwords, opportunities and challenges.

The book's major flaw is that it's fairly wordy and dry. It might not be a great front-to-back read, but it's very much worth having if you ever need to get up to speed quickly on how electronic commerce affects your business. — *Robert L. Scheier*

Are you a techie who understands packet sniffers but not product management? Or a businessperson who knows pricing but not proxy servers?

In either case, this book is a valuable one-stop introduction to the technical and business sides of electronic commerce. The authors cover all the technical issues with in-depth but understandable descriptions of the Web, security, electronic payment systems and database access over the Internet and intranets.

MEETINGS

IMF launches series on recruitment, retention

If you want your information systems organization to improve its ways of keeping and recruiting staff, the Information Management Forum (IMF) wants to help you.

The IMF (*www.infomgmtforum.com*), an international association of senior information and business executives based in Atlanta, is launching a series of discussions among human resources personnel with responsibility for IS.

The series, Structured Management Study for IT-Human Resources, begins Nov. 17. Representatives from at least 12 organizations, including Coca-Cola Enterprises, Inc., Texaco, Inc., the Internal Revenue Service and JC Penney Co., will meet in Atlanta to address staff retention for the year 2000, along with using internal mobility as a way of retaining staff.

The series' goal is to have human resources people share resources and experiences with their peers and to help craft policies that can work within their particular corporate cultures, says Bill Huffstutler, managing director of the IMF and leader of the series.

"World-class policies won't make a difference unless you can get your management team to implement them on an ongoing, consistent basis," he says.

For more details on the program, call the IMF at (770) 455-0082.

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CAN WE TALK?

We're closer to the day when computers can take dictation. Here's a quick look at the potential and the downside of speech recognition technology for users and IS managers

By Alan S. Horowitz

Your computer has taken a leap closer to taking dictation.

But the questions for information systems managers are: What is speech recognition really good for in 1997, and what are its downsides?

Two continuous speech recognition (CSR) products — software that can convert normal speech into words on a screen — are now on the market: Naturally Speaking, introduced in July by Dragon Systems, Inc. in Newton, Mass., and ViaVoice from IBM, which hit the market in September. A third company — Lernout & Hauspie in Burlington, Mass., which recently bought Kurzweil Applied Intelligence and received a $45 million investment from Microsoft Corp. — will have its product out by year's end.

Until now, speech-recognition software has been limited to "discrete" speech, in which the speaker must briefly pause between each word, limiting the product's practicality. But CSR's speed and accuracy promise to capture a much broader market. The jury is still out, because the CSR products are so new and there's no real-world experience to draw on.

For IS managers, here are the strengths and caveats of speech-recognition technology as it exists today:

Strengths

▶ ***User acceptance:*** William Meisel, publisher and editor of "Speech Recognition Update," a newsletter in Tarzana, Calif., looked into the use of voice-recognition technology at law firms and found that 60% of them immediately rejected discrete voice recognition. But with CSR, the acceptance rate is nearly 100%. About two years ago, Bard White, chief information officer at Spalding Sports Worldwide, Inc. in Chicopee, Mass., looked at discrete voice recognition and found that "the technology still wasn't there yet." He hasn't looked into the new products.

▶ ***Productivity improvements:*** Larry McCally, district service manager at the Chevrolet Motor Division of General Motors Corp. in Graham, Wash., bought Naturally Speaking to use in his home-based office because he's a slow typist. He's timed his productivity gain: "I type 30 words a minute, tops," he says. "Now [with Naturally Speaking], I can do 60 to 65 words a minute. It's so much faster, it blows me away."

Macros are also productivity boosters. Gary Flashner, an emergency room physician at Wayne Memorial Hospital in Honesdale, Pa., uses IBM's ViaVoice to record medical records. If, when examining a heart, he finds it normal, he says into his microphone, "Heart OK," which starts a macro that comes out on the computer screen as: "Heart: regular rate and rhythm, no murmurs." Considerably longer macros can also be programmed.

▶ ***Wide use:*** Vendors say the technology has a wide range of uses. It's commonly used for dictation, but it's gaining acceptance in law, medicine, government, manufacturing and warehousing (controlling equipment verbally). White says that if CSR really delivers, he would be interested in deploying the technology for dictation and for his network control room, where managers could use it to control equipment.

Rick Lees, vice president of IS development at The Pillsbury Co. in Minneapolis, hasn't used voice recognition software, but he says it could be used at the upper and lower ends of the corporate ladder. "At the lower end, I look for improvements in efficiency," he says. "At the upper end, you can bring senior-level folks into the technology environment. It's a more inviting way to get involved with the technology."

▶ ***Avoiding workplace injuries:*** Frank Ricci, vice president of Fred Ricci Tool Co. in Cranston, R.I., says he developed carpal tunnel syndrome because of his extensive use of the keyboard for computer-aided design. The symptoms were relieved, he claims, after he began using IBM's discrete speech product, which cut his keystroking by 70%. Though he hasn't used CSR, he says it seems likely this technology will be at least as beneficial.

▶ ***Helping disabled workers:*** Disabled people already have embraced discrete voice recognition technology, despite its limitations. They're likely to be happy to move on to CSR. Dorsey Ruley, a senior product manager at Ameritech, Inc. in Chicago, is a quadriplegic. He has a totally voice-activated workstation with Dragon Systems' discrete speech product, Dictate, as his primary software platform. He can dictate 40 to 45 words per minute and expects that when he starts to use Naturally Speaking shortly, he'll boost that to at least 120 words.

▶ ***Price:*** Naturally Speaking ($149 street) and ViaVoice ($99) make CSR software affordable.

Caveats

▶ ***IS support:*** IS management of CSR is tough because almost all the products have to be installed on individual PCs and can't be managed centrally from a network. Then there's the task of bringing users up to speed on new software. Many IS people "put up the cross and get out the garlic when you bring up speech recognition, mainly because it needs extra support," says Renee Griffith at Zephyr Training and Evaluation Co. in San Mateo, Calif., a reseller and trainer of speech-recognition systems. But, she adds, they think better about it after it's up and running.

Chris Hildreth

▶ ***Accuracy:*** Accuracy still leaves something to be desired. Osborne says someone who speaks distinctly can get an accuracy rate in the low 90% range. Griffith says it's possible to get a 95% accuracy rate. The problem: Even at 95%, that's still a lot of inaccurate words. In a recent review for *Computerworld*'s Buyer's Guide section [Sept. 15], writer Chris DeVoney said Naturally Speaking and ViaVoice initially recognize about 80% of spoken words, but the products improve with use as they remember corrections and additions.

Not every office or location provides a suitable environment. Ruley says the more an environment is controlled for noise, the more accurate the product. He's used it in many environments and has found that the more background noise, the more likely the software is to misinterpret the speaker. But what can't be denied is the inherent appeal of speech recognition.

The ability to tell a computer what you want it to do rather than typing in cryptic commands is intuitive and natural. Today's software has its limitations, but progress is promised. That prompts Griffith to say, "Within two years, everyone will be talking to their computers."□

Horowitz is a freelance writer in Salt Lake City.

Should boards of directors be accountable for information technology?

MAKE THE BOARD: KNOW — OR SHAPE — YOUR TECH STRATEGY

JIM CHAMPY

The answer is yes, absolutely, now that their responsibility for corporate success is growing.

Boards should have a key role in the business strategy for IT. For example, they must be aware of the investments needed in infrastructure, which can serve as a backbone to new forms of management as well as a semipermeable membrane to collaboration in an emerging world of multiorganizational enterprises. But boards shouldn't have to decide which technologies to implement. They don't need to understand the arcana surrounding firewalls, distributed objects and the Internet's TCP/IP protocols that allow the sharing of documents and information in these Internet-based private networks.

What, then, should boards know, and at what level of detail? Those questions were recently examined by The Concours Group, a Cambridge, Mass., consulting firm. Its report, "Boardroom Imperative," lists 10 questions boards should consider:

1. Can we present a consistent and personalized face to our customers? This question gets to the experience of doing business with a company, which becomes a critical differentiator as price and quality drive us toward parity across industries.

2. Are we connected to our marketplace? Specifically, how good are the links to customers, suppliers, distributors and partners? Here lie opportunities for new process breakthroughs.

3. What impact is IT having on our customers and competitors? For example, does your competitor's electronic-commerce ability give it a price and delivery advantage?

4. How much do we really know about our customers and noncustomers? This IT specialty sometimes goes under the name of customer relationship management.

5. Do we account for IT in major structural and growth moves? This gets at the hidden costs of IT integration in mergers and acquisitions as well as the kind of capital investment IBM just made in outfitting its new headquarters with the latest in Internet technologies.

6. How are we handling the year 2000 and analogous problems? These are issues that threaten to disrupt any business if not anticipated. An analogous problem is the converging European monetary system, for example.

7. Are our major IT initiatives on track to succeed? Massive IT investments that require board approval at the outset need to have board oversight to stay on time and target.

8. How fast can we capitalize on technological change? As I write this, Intel is announcing a flash memory chip that promises to quadruple the power of the microprocessor. As one consultant put it: "We are running the risk of producing more technology than the world can adapt to."

9. How strong are our IT capabilities? This is where the board may impinge on operations, but only to assure that the CIO is a member of the executive team and has the ammunition to manage the IT infrastructure, hire the best people and be able to gain new technologies.

10. Are we investing in infrastructure or spending on systems? This is the key question. It entails building an information architecture that can rapidly adapt to new technologies but doesn't scrap legacy systems before their time.

These are excellent questions, and they're timely because IT has at last become strategic. Yet, as a general rule, boards spend little time on strategy. Rather, they review financials and audit reports. They discuss personnel actions. They listen to shareholder concerns about the stock price. And from time to time, they partake in a strategy discussion at mostly a superficial level, because board members often come from different industries or nonprofit institutions.

The suggestion that boards look at IT may start to correct their ignorance. But I wouldn't form a board IT oversight committee. Rather, I'd elect a board "reinvention committee."

The committee needs to begin by understanding that the ubiquitous nature of technology, as illustrated by the Internet, will affect the behavior of consumers, the performance of businesses and the structure of industries. Only then will the reinvention committee — and the board — get the importance of the Concours questions.

For example, the question on IT's impact on customers will show the committee that customers are more sophisticated and demanding. They also have more choices. Companies will have to provide distinctive offerings to maintain customer loyalty. IT questions can thus provide real insight into the future of the business and industry.

I call this committee the reinvention committee because it isn't sufficient for a board to focus on technology alone. It has to ask how technology will drive the reinvention of a business or industry. Simply put, boards are accountable for the performance of the business. And as IT goes today, so goes the business. □

Champy is chairman of consulting at Perot Systems Corp. in Cambridge, Mass. His Internet address is JimChampy@ps.net. His newspaper columns are syndicated by Tribune Media Services.

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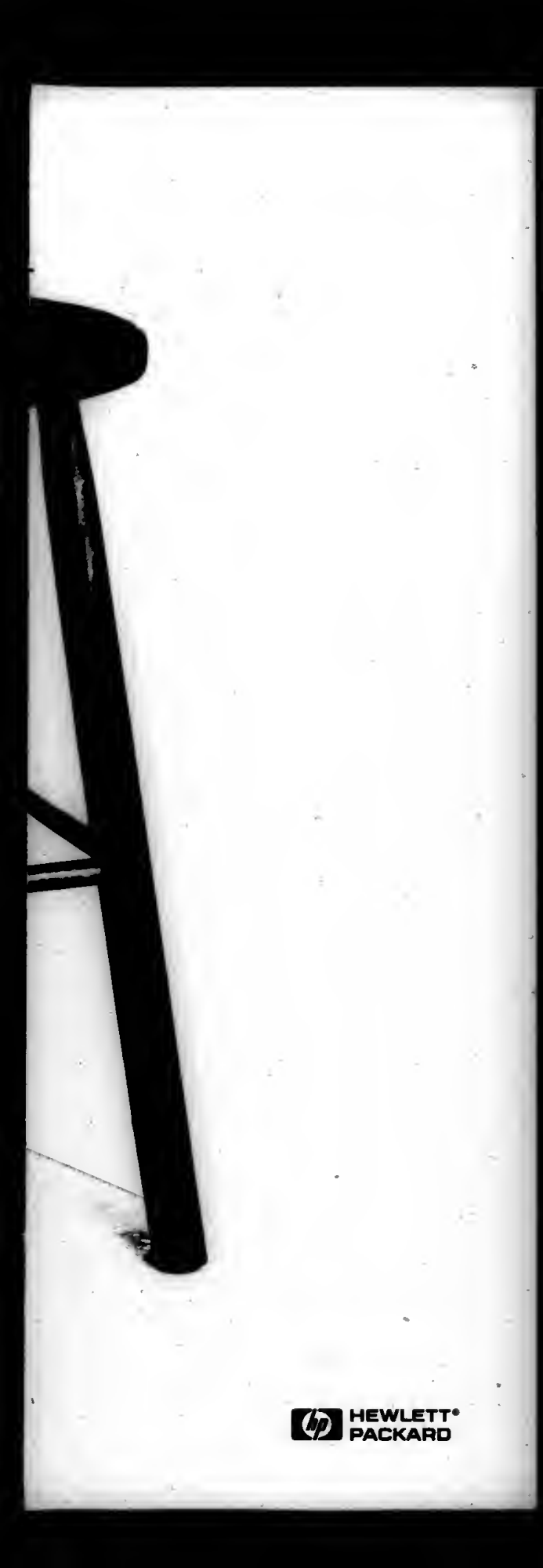

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Buyer's Guide

SUN'S JAVA WORKSHOP GROWS UP

By Howard Millman

Sun Microsystems, Inc.'s second attempt at a Java development environment, the newly released Java WorkShop Version 2.0 (JW2), is a stable, scalable and robust multiplatform Java development tool set.

Offering enterprise-class features such as partitioning across clients and multiple servers, remote debugging and team development, JW2 enables developers to move beyond creating mere gee-whiz applets and build line-of-business applications.

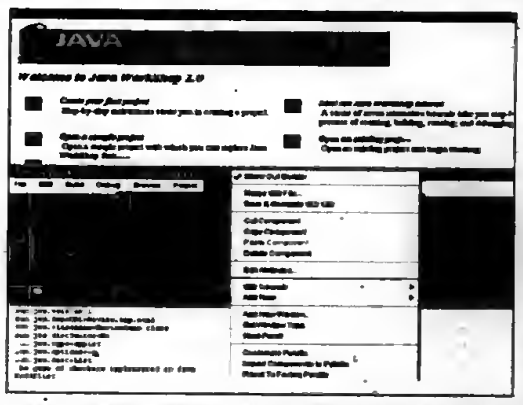
In testing the new release, I specifically looked for the improvements that elevate this release to the status of an enterprise-class development environment. Running it under Windows 95 and Windows NT, I built code segments, including JavaBeans, and tested the higher-performance, just-in-time compiler and debugger as part of the evaluation process. I didn't test JW2's wide-scale Internet/intranet deployment or team development features.

JW2 still shows its youth when compared with the vast selection of C++ environments, add-ons, peripheral support and class libraries. C++ compilers and applications enjoy an edge in performance, for example. But C++ can't equal Java's platform independence and ease of use.

And JW2 lets developers rapidly design, edit, compile, debug and tune a full range of pure Java applications better then Java WorkShop Version 1.0 or Sun's freeware Java Development Kit (JDK) 1.1. [*Computerworld* will review several competing JDK 1.1-based tool sets in the coming months.]

Considering JDK's Spartan interface and command-line-only coding, JW2 is well worth its $99 cost.

In a brief comparison with Symantec Corp.'s Visual Cafe for Java line of applications, we noticed more similarities — such as JavaBeans support, incremental debugging and a just-in-time compiler — than substantive differences.



JW2's redesigned interface lets developers work in one window, using a range of menu, tool bar and task bar options

MORE PLATFORMS

But JW2 supports four more platforms: Intel Corp. Solaris, Sun's Solaris/SPARC, Hewlett-Packard Co.'s HP-UX and SCO, Inc.'s SCO. And aside from Symantec's occasional specials, JW2 costs about $200 less. In Symantec's favor, it seems to have garnered more third-party add-ons, extensions and components.

New features and enhancements in JW2 include improved data management and communications capabilities that simplify sharing, managing and distributing applications; improved local and distributed debugging; and a redesigned, fully integrated visual interface that replaces the pretty but distracting World Wide Web browser used in Version 1.0.

Simplified project organization and the inclusion of team development features helps adapt Version 2.0 for use in multideveloper or geographically remote shops. JW2 supports three versioning/revision control systems: Sun's RCS and SCCS for Solaris and Intersolv, Inc.'s PVCS for Windows 95 and Windows NT.

FASTER DEVELOPMENT

JW2's rapid application development enhancements include a Project Manager point-and-click window that lets you load or create multiple projects and portfolios, including JavaBeans applets — a new feature — plus full client/server applications and object code packages.

Numerous changes to the structure and behavior of the developer's interface make this version easier to use than its predecessor. For exam-

Sun, page 92

PRODUCT REVIEW ▶
Java WorkShop Version 2.0
Sun Microsystems, Inc.
Mountain View, Calif.
(800) 786-0404 www.sun.com

PROS: Improved graphical interface, multiplatform support, full compatibility with Java Development Kit 1.1 standards, support for JavaBeans.

CONS: Lacks the maturity of C++ and its numerous add-ons.

PRICE: $99 for new users; free upgrade from Java WorkShop 1.0.

GRADES: Features: A; Ease of use: A.

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(b) NetWare (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTStep

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Networking Products ❒ Yes ❒ No
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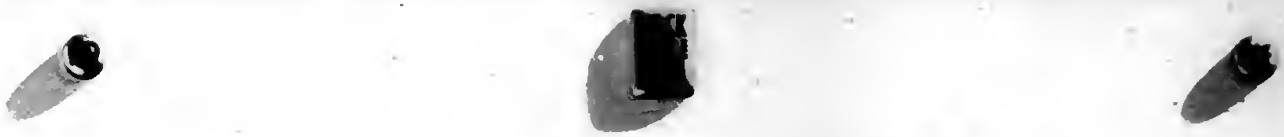

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REVIEW▸ *Adaptive Server 11.5*

Sybase tackles an IS balancing act

Client/Server Labs test shows DBMS handles quirky workloads *By Steve Antonoff*

With the introduction of Adaptive Server 11.5, Sybase, Inc. attempts to address the growing problem of multiple and often unpredictable loads on a database server.

Many of you have been there: The sales force needs rapid response time for looking up prices and placing orders, but management doesn't want to wait forever for data about what's happening *right now* — not last night or yesterday.

Information replication — duplicating data on multiple servers — has been the accepted solution. While still supporting this, Sybase Adaptive Server attempts to provide an alternative: a server that can adjust itself to the changing environment. Add parallel processing and a set of well-thought-out and well-implemented graphical tools, and you have a system that's worth consideration when making database management system decisions.

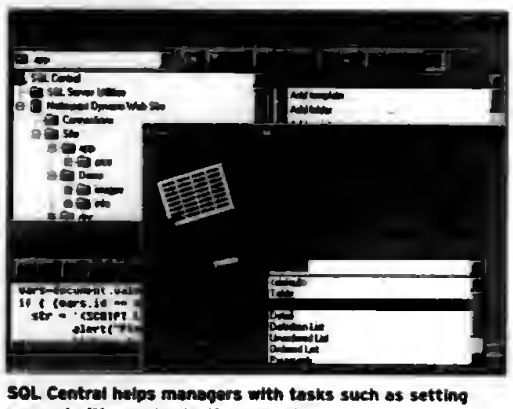
NEW FEATURES

Release 11.5 of Sybase's flagship product — previously known as Sybase SQL Server — includes a feature called Logical Process Manager (LPM). It keeps track of what's actually going on in the DBMS and allocates CPU resources to satisfy current user demands. Users, procedures or applications can be assigned to Execution Classes via the Sybase Central utility. Each Execution Class has a priority — low, medium or high — and an Engine Group. Sybase Central is also used to create Engine Groups. Under Windows NT, Engine Groups loosely couple to CPUs in a multiple-CPU environment so that, basically, an Engine Group defines how many threads can be used by an object in the Execution Class.

LPM allows, for example, anyone designated as a manager — and in a high Execution Class — to run a program with a higher priority than a nonmanager requesting the same information. Because Adaptive Server allocates CPU resources dynamically, there's a better likelihood that all users can receive adequate service based on systems administrator-defined priorities. Creating Execution Classes and Engine Groups was simple.

On the opposite end of the spectrum from the varied load situation is the problem of the huge query that must execute but takes an enormous amount of time. Adaptive Server addresses that by providing parallel processing. A single, huge query can be broken up into parallel processes and divided among multiple CPUs. That would require that the application be written to make use of parallel processing.

Another important feature of Adaptive Server 11.5 is Recovery Fault Isolation. That lets the DBMS limit hardware I/O problems to a page rather than to an entire table or database. Once a bad page is marked, the rest of the database continues to be available. Of course, data in the bad page must be recovered somehow, and, depending on what data is actually affected, full recovery could be simple using the SQL Advantage utility — Sybase's SQL command graphical user interface (GUI). Or it could be a major undertaking using backups. Modern disk technology — RAID, mirroring and so forth — can insulate the DBMS from I/O failures. But even with such technology in place, knowing that only a small portion of the database would be lost to an I/O error should let database administrators — and chief information officers — sleep better.



SQL Central helps managers with tasks such as setting user priorities and selecting output

During evaluation of Adaptive Server, parallel processing and Recovery Fault Isolation weren't used at all. Sybase Central was used to establish LPM objects but, in the limited scope of this evaluation, the real-world effects of LPM weren't measured.

INSTALLATION AND TOOLS

Installing Adaptive Server 11.5 from CD-ROM was simple. The installation program allowed the selection of a target drive, and most files were installed there. After selecting the D: drive, specifying a new directory and telling the installation program to install everything, the installation program advised that 81M bytes of disk space would be required. The actual installation directory occupied more than 110M bytes, but that included the master database — 30M bytes — which wasn't included in the size estimate. The installation program didn't display how much was going to be installed to the Windows drive if Adaptive Server is installed on another drive — some Dynamic Link Libraries (DLL) go into the Windows System32 directory. It appears that about 1M byte of DLLs and help files are installed into System32.

PRODUCT REVIEW▸

Sybase Adaptive Server Version 11.5
Sybase, Inc.
Emeryville, Calif.
(510) 922-3500
www.sybase.com

RESULTS: Latest DBMS addresses unpredictable workloads, adds parallel query. Worthy of serious consideration.

PRICE: $3,595 for an eight-user license.

The installation on a single-CPU, 133-MHz Pentium from a local integrated drive electronics (IDE)-based CD-ROM drive to a local IDE disk drive took about nine minutes. Installation time on an eight-CPU, 200-MHz Pentium Pro server with SCSI2 drives was comparable. The installation routine used one CPU, indicating it is single-threaded.

The time required to install Adaptive Server is comparable to Microsoft Corp.'s SQL Server. A reboot is required to ensure that all installed DLLs are available to the system. After a reboot, Sybase was ready. Naturally, the DBMS installs itself as a service. The installation routine doesn't set the service to start automatically, which allows for a recovery by rebooting in case the installation fails or the files are corrupted during installation. It would be nice if the installation screen advised that the service is installed but won't start automatically without user intervention.

PERFORMANCE AND USER INTERACTION

Using a "gold" premaster copy of Adaptive Server 11.5, we attempted to load a "standard" database and evaluate behavior and functionality of the base product and some of the included utilities.

The first step toward observing performance is to build a database. Using scripts written for Microsoft SQL Server that build Client/Server Labs' standard online transaction processing (OLTP) database — which is a subset of the Transaction Processing Council OLTP benchmark database — we built a family of tables. Microsoft SQL Server and Sybase Adaptive Server share a common heritage, so we were assured by Sybase that our Microsoft SQL Server scripts would work fine. But there were some discrepancies between the Microsoft SQL Server scripts and what Sybase Adaptive Server expected. The first was a setting, the second a disagreement in the parameters specified for a stored procedure.

Adaptive Server installed itself with a maximum of 10 devices. That seems rather low but was easy to change with the sp_configure stored procedure. Increasing the limit to 50 devices allowed the script to create all the database devices. Then a discrepancy between the Microsoft sp_addsegment and the Sybase stored procedure of the same name appeared: Sybase requires an extra parameter — database name — that Microsoft doesn't. That was easy to fix, and then the tables were created.

One of the strengths of Adaptive Server helped us resolve the stored procedure problem. SQL Advantage is Sybase's GUI program that allows interactive queries. It includes point-and-click access to all defined stored procedures. When a procedure is selected, the required parameters are displayed, and the user can enter data for each parameter, then execute the stored procedure.

The utility also allows pasting of table names, columns, views and so forth into SQL statements, which cuts down on the need to remember table and column names — and to be able to type them correctly. Other GUI utilities that

Sybase, page 92

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Sun's Java Workshop grows up

CONTINUED FROM PAGE 85

ple, I could build a project and manage its related source files from within the Project Manager window. Although I welcome the assistance of wizards and code generators, hands-on developers still have the option to build their applications from the command line and write script. Project Manager can optionally compile only those files that need updating, a significant time-saver.

Create Project Wizard — also new to Version 2.0 — steps you through application development, simplifying this once-complex procedure to an easy pick-and-click exercise. For example, it asks you if the project will have a graphical user interface (GUI) and, if so, whether you will create it manually or use the built-in Visual Java GUI Builder.

The Visual Java GUI Builder eases and accelerates building a visual interface for your project. A superset of Java's Abstract Window Toolkit, it lets you rapidly construct GUIs from your own library of custom graphical components or import standard JavaBeans components from external sources.

Sun organizes the GUI Builder into a set of folders that distinguishes among the types of components and displays them in a hierarchy for easy editing. Its GridBag layout manager — one of five layout managers — accelerates application design and accuracy. Preview demonstrates the GUI's behavior prior to code generation, a major time-saver. Once you're satisfied with the design, you create the actual GUI code.

CURING COMPLAINTS

Version 2.0 makes major strides toward resolving complaints of marginal application performance and insufficient or incompatible class libraries. For example, the JavaBeans Wizard helps you build, import and reuse generic JavaBeans. The wizard also creates Java Archive (JAR) files that can improve performance. JAR files combine and compress all the classes and resources used by a JavaBean, and that results in faster throughput over the Internet. I didn't test the JAR feature.

The wizard can also create two other unique files: a BeanInfo file, whose graphical property sheet lists the Bean's properties, property types, events and methods; and a customizer file that lets you interactively edit attributes of a JavaBean with the GUI Builder's attribute editor.

> Numerous changes to the structure and behavior of the developer's interface make this version easier to use than its predecessor.

Other timesaving features include an integrated source code editor that highlights Java, C, C++ and Hypertext Markup Language (HTML) syntax in different colors for faster identification and debugging. The editor also includes a file pick list, auto-indentation and user-defined keyboard accelerators. The latter feature lets you emulate your preferred editor by defining your own keyboard accelerators for file handling, editing, building, debugging and browsing the code.

The inclusion of a subset of ObjectDesign's ObjectStore PSE (Persistent Storage Engine) for Java enables developers to create Java database applications that will operate over the Internet's TCP/IP protocol. JW2 and ObjectStore PSE share a common application programming interface (API), which promises to ease migrating data to the full ObjectStore database management system if the number of transactions exceeds the capacity of the bundled version.

As a measure of its open architecture, JW2's extended framework promises to readily integrate third-party add-ons, extensions and components. For example, it will import Sun's forthcoming Java Foundation Classes libraries, JScape Corp.'s beans for multimedia widgets and KL Group, Inc.'s business charting and graphing beans.

Sophisticated developers can extend JW2's functionality by linking to its open APIs. Sun officials say you can install custom wizards and other tools, such as an image editor, in the Program Builder or add buttons to the tool bar to launch those custom wizards and other plugged-in tools directly. I didn't test those features.

BULKED-UP DEBUG

Debugging, the dark side of code writing, gains some added muscle in JW2. For example, you can debug an application within the development environment or remotely across the network. In Version 1.0, you had to leave a page to view threads, now you don't. You can set conditional and counted breakpoints, evaluate expressions and variables, navigate call stacks and control threads — suspend threads, examine current or other threads and resume thread operation. Debugging messages appear in the tabbed output area at the bottom of the main window, and a threads/stack window opens for viewing the threads.

Error messages automatically generate hyperlinks to the source code to accelerate debugging. While debugging, you can either bypass the messages or analyze them in HTML output or in the GUI.

Another debugging tool, JW2's visual Performance Profiler, helps tune your application to deliver maximum performance by identifying bottlenecks. The Profiler collects data for a runtime analysis of the application's methods. It displays in a bar chart the time spent in each method and the calls made to and from each method.

JW2 includes the standard JDK 1.1 compiler, the software equivalent of a couch potato. Sun now bundles a much faster just-in-time compiler with JW2; Sun claims that it runs 10 to 15 times faster than the JDK compiler. Based on my informal tests, I tentatively support that claim.

GETTING TO KNOW YOU

Just as tourists need a map when visiting a foreign country, developers will need a tutorial for JW2. To help developers master the wealth of features new to the product and to them, JW2 offers several effective learning aids.

Novices will appreciate its Start-up Assistant. By default, the Assistant opens each time you launch JW2. When you no longer need the Assistant, you turn it off. JW2's online help includes a table of task-oriented topics and a comprehensive multimedia, animated tutorial. Going to the next — and more sophisticated — level in online help, JW2 offers an effective search engine that supports several modifiers.

In the minor but thoughtful feature department, the ability to directly send comments to the product team reveals Sun's commitment to cultivating support for Java in the developer community. □

Millman operates Data System Services Group, a vendor-independent consultancy in Croton, N.Y. You can reach him at (914) 271-6883 or hmillman@ibm.net.

Sybase tackles an IS balancing act

CONTINUED FROM PAGE 88

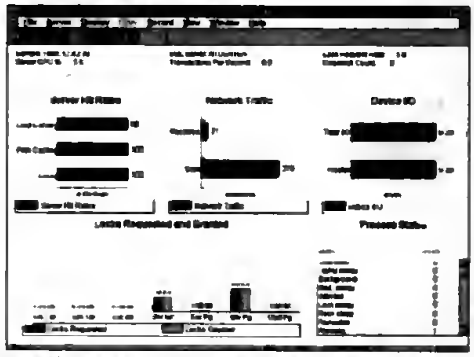
came with Adaptive Server proved as easy to use and effective as SQL Advantage.

Next came the attempt to load the data. A command-line utility called the Bulk Copy Program (BCP) is normally used to load large amounts of data into a Sybase database.

However, all attempts to run BCP as it was installed from the CD-ROM resulted in an error message indicating that bcp.exe wasn't a valid application for use with Windows NT. Sybase technical support determined that our preproduction CD-ROM was defective but that a fix was available over the Internet. That repaired the BCP problem, which we were able to verify has been corrected in the production CD-ROM.

BCP did run, but additional changes were required to the batch and format files that we used to load the data. Again, the changes were minor — things such as replacing slashes with dashes in the batch file and changing the version number in the format files.

The delays in Sybase being able to resolve scripting and data loading issues left insufficient time to run a full benchmark. But several queries were executed, and all seemed to perform quite adequately. With eight database engines enabled on the system, all eight CPUs appeared to experience approximately equal loads when a full eight simultaneous tasks were started.



Adaptive Server 11.5's system monitor tracks performance and network traffic problems

SUMMARY

Test Adaptive Server in your environment to determine if the higher price is justified. Although Adaptive Server has a significant price disadvantage with respect to Microsoft SQL Server — $3,595 list price for an eight-user version vs. a $1,895 list price for a 10-user version of SQL Server — the ability of Adaptive Server to balance its load over multiple CPUs is impressive. The GUI tools are solid, well-designed and work well together. □

Antonoff is a senior testing engineer at Client/Server Labs, Inc. (www.cslinc.com) in Atlanta, a primary lab test partner of Computerworld.

In Depth

YEAR 2000 Fire, brimstone & upside

BY ROBERT L. SCHEIER

What do you get when you combine a problem that could cause global chaos, a $600 billion price tag and an inescapable deadline?

An investment opportunity, that's what.

Every week it seems, there's a new prediction of the problems that will occur because some computer systems won't be able to tell the difference between the 20th and 21st centuries.

If the problem is indeed that bad and that expensive, the stocks of companies that sell year 2000 solutions should soar. On the other hand, stock in companies that haven't solved their "millennium bugs" should tank.

Where there's trouble, there's an opportunity to speculate — and to sell advice to those who speculate. Here's an overview of the advice offered by analysts of all stripes. And of course, here's the best advice of all: Your results may vary.

Fire, brimstone & upside, page 96

SUN

DEC

(You'd be surprised at all the connections you

If, by chance, you're not surprised at how open IBM Serial Storage Systems manage to be, then their remarkable performance will raise an eyebrow or two.

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YEAR 2000 Fire, brimstone & upside

CONTINUED FROM PAGE 93

The doomsayers

GARY NORTH waxes downright biblical about the year 2000 software bug. "I believe God really does bring predictable corporate sanctions on rebellious societies," North writes. "I am going to make sure I have plenty of cash, food and survival gear on hand come January 2000."

Author Tony Keyes sounds as if he's ready to race North to the bunker. "The crash of 1929 will pale in comparison to the 'crash of the century,' " he warns. "Layoffs will be rampant, unemployment will rise dramatically, and the economy will drown in a dismal depression."

What are these guys doing? Selling investment advice, for one thing.

Keyes, a former sales executive at Cisco Systems, Inc., recently published *The Year 2000 Computer Crisis — An Investor's Survival Guide* (The YaK Investor, Brookeville, Md.; $29.95). North, a reclusive historian and author in Tyler, Texas, publishes the $129-per-year "Remnant Review," a newsletter that predicts which companies will survive and even profit from the year 2000 issue.

In an interview, Keyes won't say exactly how the bug will trigger an economic depression, predicting only "a combination of events. Which specific ones happen will be less important than the combination of a significant group of them."

And although Keyes admits that he fully intends to make a lot of money in this business through investments and his book, he says, "I'm not really happy with a catastrophe. I'd love to have a healthy economy in which to spend that money."

What does Keyes advise? For starters, that investors check on a company's year 2000 readiness before investing in it.

As the date change moves closer, he plans to move 75% of his investments into cash or other highly liquid assets, using only midsize to large banks that have solved their year 2000 problems and haven't made many loans to non-year-2000-compliant customers.

Because precious metals rise in value during crises, Keyes recommends diversifying your portfolio with silver, gold and other hard assets. He says he's already sold all his stocks, except those in year 2000 vendors, and "[I] am divesting myself of all real-estate holdings except for my self-sustaining hideout."

But there's an upside, Keyes writes: "In a post-crash depression, interest rates will hit rock bottom as the Federal Reserve attempts to stimulate activity. With your cash in hand, you'll be able to pick up beachfront property for a song and secure a loan at a ridiculously low rate of interest."

North predicts the collapse of international trade as year 2000 bugs cripple everything from telephones to nuclear power plants. To survive, North advises moving at least 100 miles from the nearest big city, converting most of your assets into "tools and durable consumer goods" and shifting most of your liquid wealth into bullion gold and silver coins.

North declined to be interviewed, but in an electronic-mail message, he indicated he's following his own advice. Besides writing his newsletters and "economic commentary on the Bible, [I'm] getting moved to my 60-acre survival property that has a natural gas well on it for my own home power generation."

The market watchers

"AT THIS STAGE of company development, we don't deal in Revenues, we deal in Dreams."

That post, from an Internet discussion group, pretty much describes year 2000 stocks.

Neil Cooper, an analyst at Cruttenden Roth, Inc., calls it "concept investing," meaning investors bet their money based on their hopes for how vendors will profit from the year 2000 rather than on the revenue or profit they've actually generated.

But as customers move from year 2000 assessment into the repair work itself, here's how several analysts see the market developing.

William Rabin and Terrence Tierney at J. P. Morgan Securities, Inc. warn investors to avoid "companies that are based solely on year 2000 products" in favor of those that have good businesses already and stand to benefit from year 2000 work.

Among contract programmers, their potential winners include Computer Horizons Corp. in Mountain Lakes, N.J.; Data Dimensions, Inc. in Bellevue, Wash.; Keane, Inc. in Boston; and Analysts International, Inc. in Minneapolis.

The two analysts favor software tool vendors that include Viasoft, Inc. in Phoenix; Intersolv, Inc. in Rockville, Md.; Micro Focus Group in Palo Alto, Calif.; and Platinum Technology, Inc. in Oakbrook Terrace, Ill. Rabin and Tierney also track systems integrators such as Computer Sciences Corp. in El Segundo, Calif.; Electronic Data Systems Corp. in Plano, Texas; and American Management Systems, Inc. in Arlington, Va.

"I am divesting myself of all real-estate holdings except for my self-sustaining hideout."
– Tony Keyes, "Remnant Review"

ERIC HANS

Other possible beneficiaries include disaster-recovery firms such as Comdisco, Inc. in Rosemont, Ill.; vendors such as PeopleSoft, Inc. in Pleasanton, Calif., whose software will replace noncompliant systems; temporary services firms such as Robert Half International, Inc. in Menlo Park, Calif.; and consultants such as Gartner Group, Inc. in Stamford, Conn.

Analyst Damian Rinaldi at First Albany Corp. in New York recommends Compuware Corp. in Farmington Hills, Mich. Compuware expects to see 25%-per-year growth in sales of its mainframe maintenance tools, which also can be used after 2000.

The market baskets

SO YOU WANT TO CASH IN on the year 2000, but you don't have the time or skills to pick the best stocks. How about a stock index?

The idea is that experts pick, say, 15 to 20 companies that do a lot of year 2000 business. They lump the stock prices of those companies and use the combined performance to gauge the health of the year 2000 market.

But that isn't a painless way to make a killing, as the creators of the indexes are quick to point out.

An index is a "30,000-foot view" that masks important differences among companies, says Tarun Chandra, vice president of research at Punk, Ziegel & Co., a New York investment bank that maintains its own year 2000 index. (The company doesn't allow trading in the index, using it instead to promote its stock research.)

Moreover, you can't invest directly in most indexes the way you can buy stock in a company. Instead, investors bet on whether the index will rise or fall by buying and selling option contracts whose price is keyed to the performance of the index.

Each contract gives the investor the right, but not the obligation, to buy or sell the contract at a fixed level anytime before the contract expires.

For instance, if you buy "December 150 calls," you buy the right to purchase the index at 150 anytime before the expiration of the contract.

If the index has risen to 200 by that time, you can earn $50 for each contract you purchased (minus what you paid for the contract) by taking ownership of the stock or selling the contract.

Such speculation carries "a very high level of volatility and risk," Chandra says.

The De Jager Year 2000 Index is named after Peter de Jager, the Canadian consultant who has relentlessly publicized the problem for years. The index's 17 companies range from giant EDS to tiny Zitel Corp., a maker of storage systems.

A more traditional investment is The HomeState Year 2000 Fund, which is expected to be approved by regulators by the end of next month, says Scott Rehr, president of HomeState Group Mutual Funds in Lancaster, Pa.

Fund managers expect to invest at least 65% of the fund assets in more than 60 publicly traded year 2000 vendors, with the rest available to invest in or "short" non-year-2000 vendors that will either benefit or be harmed by the year 2000.

Given the nature of the year 2000 market, the fund managers warn that the year 2000 fund will be more volatile than the typical mutual fund. In fact, assuming that demand may dry up by then, the fund managers plan to vote in the second half of 2000 whether to change the fund's goals, merge it with another fund or abolish it. □

Scheier is Computerworld's senior editor, management. His Internet address is robert_scheier@cw.com.

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IT Careers

The corporate vs. consultant struggle

By Alice LaPlante

JATS and TRADE-OFFS

ART VALERO

Consulting and corporate IS are no longer such clear-cut career paths. Many IS pros are trying both lifestyles to find the right fit.

Just try to offer Ernie Torricelli a staff job in a corporate IT department. Watch him shudder before he turns it down flat.

Torricelli racked up 10 years' experience in various information technology staff positions before quitting five years ago in favor of the independent contracting life. This month he's working at Fidelity Investments in Boston, helping to migrate its massive 401(k) legacy database to a client/server architecture.

Torricelli doesn't know where he'll be next month, much less six months from now. He *does* know the work will be challenging — after all, he'll have his pick of four or five offers. He also knows the work will pay well. On average, he gets 30% more per diem than he would make in a comparable staff IT job.

And perhaps most important, he says the lifestyle suits him.

"I'm independent. I do what I like. And I don't have to worry about office politics," Torricelli says. "I go home each night in a much more relaxed frame of mind."

But don't tell Darlene Nartker about the joys of the independent consulting life.

She's been there, done that. And now she's overjoyed to be firmly ensconced as a business analyst within the IT department at Boise Office Products in Itasca, Ill.

Nartker, who has a bachelor's degree in computer science and more than a decade of IT experience, ran a successful World Wide Web design consulting firm for four years until she joined Boise seven months ago.

Her Web technical and business skills were "greatly in demand and highly paid" as an independent contractor, she admits. So why not continue down that lucrative path?

"I was really tired of the ups and downs of being on my own," Nartker says. With contracting, you work "insane hours" while on a project, and when it's over, "you find you haven't had time to think about booking the next one," she says.

A salaried position at an IT consulting firm would have paid equally well, but Nartker was put off by the demands such a career choice would have made on her personal life. As the mother of two young children, she wanted a flexible schedule that allowed her to condense her professional responsibilities into three workdays per week. And she absolutely refused to consider the horrific traveling routine of the typical consultant.

"I can — and do — travel on business," Nartker says. "But do I want to be on the road every week? Absolutely not."

And here you have it: the IT consultant/staffer trade-off.

The big bucks to be made in the booming technology marketplace are luring many IT staffers to the contracting life. IT managers admit they're having trouble finding — and retaining — IT workers with the skills they need because they're snapped up by contracting agencies and consulting services firms at prices most IT shops can't even think about offering.

"There is more money to be made in consulting or contracting, no doubt about it," says Dave Pingel, a technical staffing specialist at American Century Investments. Pingel is responsible for finding top-notch technologists for IT positions at the Kansas City, Mo.-based financial services firm. And given the current job market, "this has been very, very challenging of late," he says.

Like most Fortune 1,000 firms, American Century's IT needs have increased exponentially in recent years. In 1992, the IT department consisted of fewer than 100 employees. Today, there are 400 full-time IT workers. And there are more than 50 vacancies,

for everything from basic Cobol, CISC, DB2 and year 2000 professionals to experts who have the latest C++, Java and SQL skills.

Pingel says he "does everything you can think of" to attract talent: participate in career fairs, actively recruit on college campuses and advertise in print and online job-search forums, not to mention doing all he can to make sure salaries and benefits at American Century are competitive.

But despite the fact that a corporate IT position could never pay as well as a consultant's position, the consulting life isn't for everyone. And so Pingel and other IT managers have learned how to attract talented workers back to the fold. The main attraction: a more balanced and stable life.

"The contractors we've 'converted' recently come over because they're tired of the lifestyle," Pingel says. "They want the kind of health and retirement benefits we offer. They like the working atmosphere. They like our people, and they're ready to settle down."

> "The contractors we've 'converted' recently come over because they're tired of the lifestyle."
>
> – Dave Pingel, American Century Investments

HAPPY WORKERS

Perhaps most important, American Century and other corporate IT shops are learning that the difference between a happy IT worker and one who is checking the help wanted ads is often related to skill development and training opportunities rather than cold hard cash.

"The interesting thing is that money turns out not to be the most important factor," says Jon Reed, director of the SAP AG division of information systems recruiting firm Allen Davis & Associates in Amherst, Mass., which places IT workers in both contracting and staff IT positions. "Our candidates tell us that training and skill development are the biggest appeal of the consulting life. The fact that consultants get a lot of exciting experience under their belts very quickly is key."

Corporations are becoming more agile in guaranteeing employees interesting projects and a varied choice of technologies to work with, Reed says.

Bob Walsh, head of IT at Boise, agrees. He says the secret of hiring and retaining excellent technologists such as Nartker is "to recognize that people in the '90s are both ambitious yet have a life outside the company. Strike the right balance between paying them well and giving them interesting work and the autonomy to decide things for themselves. Treat them like adults. Let them know what you need, and let them work in the way they know best."

Walsh says he believes in offering employees flexible working hours and conditions, including options of occasionally working from home, long-term telecommuting or consolidating a full-time workweek into less than five days.

"Sooner or later, you have lifestyle priorities that are equally important to how much money you take home," Walsh says. His youngest child is now in college, but he remembers how "those kindergarten graduations that took place at 10 a.m. on regular workdays were pretty important events."

"Yes, the money is alluring. But if you are doing good work, and you've got a reasonable boss who lets you take your kids to the ball game and who compensates you fairly — that can be the determining factor," says Chuck Mueller, a principal at AJM Professional Services, a Troy, Mich., recruitment firm that specializes in IT.

SALARY ISSUES

Still, Walsh and others admit they can't be nonchalant about money matters. If they're lucky enough to snag a talented IT person permanently, it's likely that person earns staggeringly more than colleagues hired 10 years, five years or even one year ago. "Market conditions change that fast," Walsh says.

Walsh has worked with the Boise human resources department to ensure that an "irregular review" process can be triggered whenever inequities in pay become apparent. That means IT workers aren't evaluated on just a yearly basis but at any time can request a review to ensure they are being compensated fairly according to internal standards.

"On any given day, we may have a few underpaid and a few overpaid IT workers. But our process helps us make pretty sure we're not paying one programmer/analyst $25,000 more than another for the same work," Walsh says.

STOP THE INSANITY

Still, officials at consulting firms understand that the hectic lifestyle deters many excellent IT workers from joining their ranks. And many firms are taking steps to address that drawback.

"Whatever we can do to reduce the traveling and the disruption to the personal life that has historically been associated with consulting, the happier our employees are," says Dave Pickrell, chief operating officer at the IT Solutions Group of Corestaff, Inc., an IT services and consulting firm based in Houston.

Gail Lutey, head of investor relations at Complete Business Solutions, Inc. (CBSI) in Farmington Hills, Mich., says "the pace becomes too much" after a while. CBSI provides IS project and outsourcing work to Fortune 1,000 clients.

Happily, CBSI clients "are beginning to understand that much of the IT contract work we perform can be done remotely," Lutey says. "The more we bring the work to our people rather than making them go to the work, [the more] we're able to attract talent." □

LaPlante is a freelance writer in Woodside, Calif.

Rates for IS contractors and consultants

IS contractors and consultants earn a wide range of hourly rates, depending on skills and level of experience. Here's how that side of the industry breaks down.

Hourly rate	Total % of consultants and contractors
$240 and up	0.4%
$150 – $239	0.4%
$125 – $149	0.9%
$120 – $124	0.4%
$96 – $119	2.6%
$91 – $95	1.3%
$86 – $90	1.3%
$81 – $85	3%
$76 – $80	3%
$71 – $75	9.1%
$66 – $70	3.9%
$61 – $65	10.4%
$56 – $60	10%
$51 – $55	9.6%
$46 – $50	10.9%
$41 – $45	11.4%
$36 – $40	8.3%
$31 – $35	4.8%
$21 – $30	4.8%
$10 – $20	3.5%
Totals	**100%**

Source: *The Information Elite* by Dominic S. Black and Richard C. Anderson, 1997

Salaries for corporate IS professionals

IS managers and professionals saw their base salaries and bonuses skyrocket in the past year. They will make the following this year for total cash compensation.

Job title	Total compensation
Chief information officer	$123,000
Director of systems development	$82,000
Director of networks	$74,000
Director of IS operations	$73,000
Project manager, systems and programming	$67,000
Manager of voice/data communications	$66,000
Database manager	$61,000
Senior systems programmer	$56,000
Computer operations manager	$56,000
Senior systems analyst	$56,000
Database analyst	$54,000
Senior programmer/analyst	$53,000
LAN manager	$53,000
Systems analyst	$51,000
Systems programmer	$49,000
Network administrator	$47,000
Technical support manager/help desk manager	$46,000
Programmer/analyst	$43,000
Computer operations supervisor	$41,000
Technical specialist	$38,000
Lead computer operator	$33,000
Help desk operator	$32,000
Computer operator	$27,000

Source: Computerworld's 1997 Annual Salary Survey

EXECUTIVE TRACK

John Majeski has been named chief information officer at Valley Forge Military Academy and College in Wayne, Pa. He will be responsible for all technology-related projects, introducing advanced library technologies, integrating technology with the school's curricula and implementing a new campus network that connects the college's 800-plus cadets. Majeski previously was director of information systems at a large mortgage banking company in New Jersey.

Debra Specht has been appointed CIO at Harvard-Pilgrim Health Care, a leading health care organizatioo in New England that is based in Brookline, Mass. Specht previously was vice president/CIO at Zurich Insurance Group in Chicago. Before that, she was vice president of infrastructure management and special delivery at Continental Insurance Co. in Chicago.

John D'Agostino has been appointed vice president of systems at Diversified Investment Advisors, Inc., a national investment advisory firm that specializes in retirement plans. D'Agostino came to Diversified from MBL Life Assurance Corp., where he was responsible for the implementation of multiyear systems plans, including the year 2000 conversion.

Carl Chanson Williams has been named senior vice president and CIO at The Principal Financial Group in Des Moines, Iowa. He is responsible for leading the company's information technology organization as well as development and implementation of its corporate business strategy. He previously was vice president of IT at Amoco Corp. in Chicago. Before that, he held senior IS positions in publishing, public relations, manufacturing and technology firms.

Patricia Trebino has been promoted to vice president of IS at Tufts Health Plan in Waltham, Mass.

Hassan Dayem has been named vice president of research information systems at Merck Research Laboratories in Rahway, N.J., a leading pharmaceutical company. He is responsible for applying computing and information technologies to drug design and development. Dayem previously was director of Los Alamos National Laboratory's computing, information and communications division in Los Alamos, N.M.

Timothy D. Fuller, 34, has been named director of IS at Crown Central Petroleum in Baltimore. He has worked at Crown since 1991 and has held several positions in the IS group. He previously held similar positions at USF&G Corp. in Baltimore.

Vincent D'Orazio has been named CIO at Intermedia Communications, Inc., an integrated telecommunications service provider in Tampa, Fla. He will report to Rob Rouse, executive vice president of engineering, systems and operations, and is responsible for IS operations and planning. Before joining Intermedia, D'Orazio worked at the Ameritech family of companies in a variety of key IS management positions.

William S. Husband, 57, has been appointed vice president of technology at AT&T Systems Leasing Corp. in Bloomfield Hills, Mich., a business unit of AT&T Capital Corp. He previously was director of technology planning at AT&T Systems Leasing.

Steven J. Pechter has been named an executive vice president at Learning Systems Sciences in North Hollywood, Calif., an instructional design firm for retail-based multimedia training applications. Previously, he was senior vice president of MIS at Big 5 Sporting Goods in El Segundo, Calif.

Richard L. Morris has been named vice president and CIO at Wellspring Resources, a leading outsourced benefits administration firm in Jacksonville, Fla. He is responsible for all technology functions and strategy at the company. Morris previously was CIO at BetzDearborn, Inc. Before that, he held top IS positions at U.S. Healthcare, Perkin-Elmer Corp., Fidelity Bank and Pitney Bowes, Inc.

Roger Gumani has been named vice president and CIO at Bell Atlantic Nynex Mobile in Bedminster, N.J. He is responsible for the company's customer support, billing and network applications. Previously, Gurnani served as executive director of Broadband Systems at Bell Atlantic Corp., managing the development and implementation of systems for fast-packet data and switched digital video services.

Larkin Nolan has been appointed CIO for the state of Alabama. He is responsible for the state's recently merged data systems management and telecommunications groups, now the information services division within the department of finance.

Harry Massey has beeo named CIO of general support services for the state of Colorado. Steve McNally replaces Massey as staff director at the Colorado Commission on Information Management.

Leslie Hearn has been named CIO for the state of Maryland. Hearn previously served as director of information resources for the Maritime Administration in the U.S. Department of Transportation.

Nader Habash has been named vice president and director of MIS operations at Greater Bay Bancorp in Palo Alto, Calif. Habasb has more than 17 years of experience with voice and data communications. He will provide technical support and information technology and will implement technical strategies for Greater Bay Bancorp, Cupertino National Bank, Mid-Peninsula Bank and Greater Bay Trust Co.

Marisha Geraghty has joined Kmart Corp. in Troy, Mich., as divisional vice president for electronic commerce. In the newly created post, she will be responsible for the coordination and development of commerce through the World Wide Web and will report to Marvin P. Rich, executive vice president for strategic planning, finance and administration. Most recently, Geraghty served as electronic retailing manager of new business development at JC Penney Co.□

IT CAREERS INDEX

!HIRING PLANS DOUBLE!

IS managers will double the number of new hires in the next three months, and during the next year, according to the most recent IT hiring survey figures. The projected quarterly increase in permanent staff rose from 2.7% last month to 5.4% this month. Projected staff increases for the next year, meanwhile, also nearly doubled since last month's survey, increasing from 1.5% to 2.6%. The hiring of operating system workers will also rise in the next quarter. Hiring in that area has risen from 11.8% to 12.3% in the past month.

Hiring plans	Within 3 months		Within 12 months	
	Permanent	Temporary	Permanent	Temporary
Change in IS staff	5.4%	12.3%	2.6%	NA
Managers increasing staff	25.4%	11.9%	27.3%	10.9%
Managers decreasing staff	NA	NA	2.5%	7.1%
Managers maintaining staff levels	NA	NA	70.2%	82.0%
Current staff mix	Permanent 89.8%		Temporary 10.2%	

Base: 1,249 IS managers NA=not available

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Applications Test Engineer
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Real-Time Embedded Software Engineer
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Will provide leadership and direction while maintaining full P&L responsibility for this $40 million branch office. Responsibilities include sales direction, extensive contact with clients at CIO/CEO level and ultimate quality assurance of all branch engagements and client delivery.

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This is a newly created position, resulting from our ongoing growth and expansion. Encompassing corporate responsibility, this position will provide visionary direction for all sales departments, as well as cohesion for marketing and sales.

Ft. Lauderdale/Miami Branch

Hardware Service Manager

Responsibilities include management of computer technicians and department P&L within this $15 million office. Will also manage and direct daily customer service calls, as well as long-term client relationships and outsourcing. Candidate must possess a background in mid-range and micro-computers.

Additional opportunities may be available. Inquiries at all levels are encouraged.

Our excellent compensation and benefits package includes a 401K. For immediate consideration (deadline for resume submittal is November 10th) forward your resume to **Waldec/IKON, Human Resources, 5050 W. Lemon Street, Tampa, FL 33609. E-mail: jobs@waldec.com. FAX: (813) 261-2500.** EOE M/F/D/V

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University of Michigan Health System

University of Michigan Health System has the following positions available in the Medical Center Information Technology Division. These positions are full time posts including the very comprehensive benefits package offered by the University of Michigan Health System.

IMS Database Administrator

Provide database administration support for production IMS systems. This would include backup/recovery procedures, strategy planning/implementation, monitoring and tuning, capacity planning, securing 24/7 availability, and on-call support.

Qualified candidates will have 3-7 years experience to an MVS CICS/IMS environment. Must be willing to cross train to order to support IMS and MVS Storage Administration to an on-call rotation. Must have the ability to work in a team environment. Experience with DFSMS, HSM and DSS or vast or BMC MVS and IMS tools is desirable.

Oracle Database Administrators

Provide database administration support for production systems. This would include backup and recovery strategy planning/implementation, performance tuning of the database, capacity planning, troubleshooting, installation and configuration, securing, 24/7 availability, and on-call support.

Qualified candidates will have 3-5 years experience in Oracle v7.x or Sybase v10/V11 database administration in a Unix environment. Must be willing to cross train to order to support both Oracle and Sybase in an on-call rotation. Ability and willingness to work in a team environment. Experience with AIX on an IBM/RS6000 SP is a plus. Bachelors degree or equivalent combination of experience is necessary.

Network Engineer

Network Engineer responsible for building, maintaining, and troubleshooting NetWare environment over multiple departments in the Medical Center. Should be a CNE4 or have significant experience/knowledge with NetWare 4.x in an enterprise-wide network environment. Experience with Internetware client, Windows NT, mail, Management, TCP/IP and other distributed services a plus.

We are looking for an individual with strong technical skills, communications and organization skills, and has the ability to work individually and or a team member.

MVS/ESA Systems Programmer

Systems Programmer responsible for installing and maintaining MVS/ESA and related products on a large IBM mainframe. The duties would include: migrating from MVS 5.2.2 to OS/390, performance tuning and monitoring, capacity planning, securing 24/7 availability, and on-call support.

Qualified candidates will have 3-7 years experience or a MVS/ESA Systems Programmer. Candidate must be willing to cross train to order to support AIX operating systems in an on-call rotation. Must have the ability to work in a team environment. Experience with CICS/ESA, DL/1, DFSMS, HSM and DSS a desirable.

Computer Systems Consultant II

Troubleshoot and identify problems with enterprise wide workstations and applications. Participate in installation, relocation, configuration, and modification of workstations. Participate in the planning, development, implementation, and support of enterprise-wide hardware and software. Provide technical assistance and analysis for enterprise-wide software distribution. Write and modify complex code in Visual Basic, C++, Windows, and DOS for the desktop software environment.

Qualified candidates must possess demonstrated technical, customer service, communication, and organizational skills. Ability to work individually and in a team environment. Experienced with DOS, Windows, Unix, TCP/IP terminal emulation software. Experience with desktop management software is desirable. Microsoft Certified Systems Engineer. Bachelors degree, or equivalent combination of experience is desirable.

Qualified candidates should send resume to:

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4251 Plymouth Rd
Ann Arbor, MI - 48109-0785

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High level computer programming and business analysis in an AS/400 environment utilizing Cobol and Synon languages. Ability to lead teams.

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Programmer/Analysts

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Programmer Analyst. Plans, designs, develops, tests and documents computer programs based on knowledge of programming techniques and computer systems. May consult with users of computer programs to determine programming requirements. May be involved in installing completed programs onto production computer systems. Work with UNIX and either C or C++. Must have proof of legal authority to work permanently in the U.S. Reqts: B.S. in Computer Science, Engineering, or Math. 40 hrs/week, $48,000/year. Please submit 2 copies of both resume and cover letter to Illinois Department of Employment Security, 401 South State Street - 7 North, Chicago, IL 60605. Attention: Janet Aschenbrenner. Reference # V-IL 16518 - A. An employer paid ad. No calls.

Software Engineer: Analyze & consult w/hardware engineers & corporate decision makers for software/hardware dev. Design, dev., & implement embedded software on TCP/IP/APPN gateway card to interface w/VAX/MVS. Platforms: Novell/Netware Protocols: Ethernet & Token Ring interface, Telnet Control Manager, Network Management Card, Accounting & RADIUS servers X.25 PAD, KA9Q, UNIX networks NET server & custom features applications on a Real Time Operating system. Use C, C++, & Assembly language such as SPARC, DLX 4005, 5000 & 68000, CAD VLSI tools such as MAGIC, OCTTOOLS, SPICE & MUSA, protocols such as LAPB, RS232, multiprotocol routers, device drivers & simulators such as Simpack, Dinero, statistical packages such as MATLAB. Reqmts: M.S. Electrical Eng., 1 yr. exp. in job offered or in related occupation of Real Engineer, Design Qualification & Assurance. Must have completed the following graduate course work: VLSI design & testing, microcomputer interfaces & syst., microcomputer operating syst. & computer communication. 40hrs/wk 8A-F 9-5) $42,400/yr Must have proof of legal authority to work permanently in U.S. Status. IL. Send two copies of resume, transcript & diploma to M. Millea, Ref: V-IL 16989M, IL Dept. of Employment Security, 410 S. State-7N, Chgo, IL 60605. No calls. Employer paid ad.

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The Law School Admission Council, best known for administering the Law School Admission Test (LSAT), continues to implement technically aggressive information management tools. The following opportunities are available in Newtown, PA:

Oracle DBA

Specific responsibilities will include overseeing the development, performance tuning and administration of the Oracle systems; maintaining the computing environment; and implementing new technology and enhancements. Qualified candidate will possess solid knowledge of and experience with: SQL, Performance & Tuning, UNIX shell scripting languages, Oracle running under AIX/UX, and data center operations (backups, monitoring). A minimum of 3 years broad experience with application monitoring and performance/capacity products in a multiple platform environment is required; a Master's degree is preferred. Familiarity of the client/server environment is a plus. Job Code: DBA/CW.

Senior Programmer/Analyst

Candidate will work extensively with the Oracle Financials team to support and enhance Oracle Financials and Human Resources system. 1+ years of Oracle Financials and SQL experience required. General knowledge of business accounting a must. Job Code: PA/CW.

Senior Intranet Developer

Function as a technical lead for a development project team on system architecture/design for inter/intranet application. Work with latest MS technology (Internet Information Server, ActiveX). Thorough knowledge of object-oriented design and multi-tier client/server architecture with 8+ years of experience required (MS or Comp Sci preferred). Experience with Oracle, Visual Basic, HTML desired. Job Code: IS/CW.

To apply, please send/FAX/e-mail resume and letter of application to: C. Bennett, Human Resources Section, LSAC, Job Code: _____, P.O. Box 40, Newtown, PA 18940. FAX: 215-968-1188. E-mail: hrresponse@lsac.org. Only resumes with salary requirements will be considered. The application deadline is November 10, 1997.

LAW Services

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This position offers a competitive salary and benefits. Resumes, including salary requirements, should be mailed to: **Vulcan Chemicals, Attn: Alice Durland, P.O. Box 530390, Birmingham, AL 35253-0390; faxed to (205) 877-3448; or e-mailed to geoffjob@vul.com.** Replies will be held in strict confidence. No phone calls or recruiters please.

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Will provide leadership and direction while maintaining full P&L responsibility for this $40 million branch office. Responsibilities include sales direction, extensive contact with clients at CIO/CEO level and ultimate quality assurance of all branch engagements and client delivery.

Vice President, Sales & Marketing

This is a newly created position, resulting from our ongoing growth and expansion. Encompassing corporate responsibility, this position will provide visionary direction for all sales departments, as well as cohesion for marketing and sales.

Ft. Lauderdale/Miami Branch

Hardware Service Manager

Responsibilities include management of computer technicians and department P&L within this $15 million office. Will also manage and direct daily customer service calls, as well as long-term client relationships and outsourcing. Candidate must possess a background in mid-range and micro-computers.

Additional opportunities may be available. Inquiries at all levels are encouraged.

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Senior Software Developer. Design, implement, and maintain compiler generating C code for SEER*HPS under OS/2 operating system. Implement enhancements and maintain compiler generating C code for SEER*HPS under Windows NT and MVS/TSO operating systems. Implement enhancements, maintain, and test SEER*HPS compiler runtime support library, macro preprocessor, and component header generator. Coordinate work of contractors team in Russia. Requires: Bachelors in Math, Comp. Science or related field. Three yrs. exp. in the job offered or 3 yrs. exp. as a Software Engineer or Systems Analyst or Programmer Analyst. The 3 yrs. of exp. must involve MVS/TSO, Windows NT or OS/2, Compiler Technology, C, and SEER*HPS. 40 hr wk. 8:30 am. - 5:00 pm. Mon.-Fri. $45,760/yr. Overtime N/A. Overtime $N/A. Interested applicants to apply to the nearest Job Service office or submit a resume to: Job Service, 742-F East Chatham St. Cary, NC 27511. All resumes must include the applicant's Social Security number and Job Order number NC5770366 and DOT code 030.062-010.

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- Excellent knowledge of SQL and COBOL

Sr. MVS Systems Programmer
- 10+ Years experience with MVS (OS/390 is a plus), SMP/E, and Computer Associates products in a multiple LPAR environment
- Excellent knowledge of Program Product installation and maintenance

Sr. CICS/ESA Systems Programmer
- 10+ Years experience in the installation, implementation of CICS/ESA in a multiple LPAR MVS environment.
- Excellent knowledge of COBOL and IBM Assembler

DASD Administration
- 5+ Years experience in managing a large (2TB+) DASD farm
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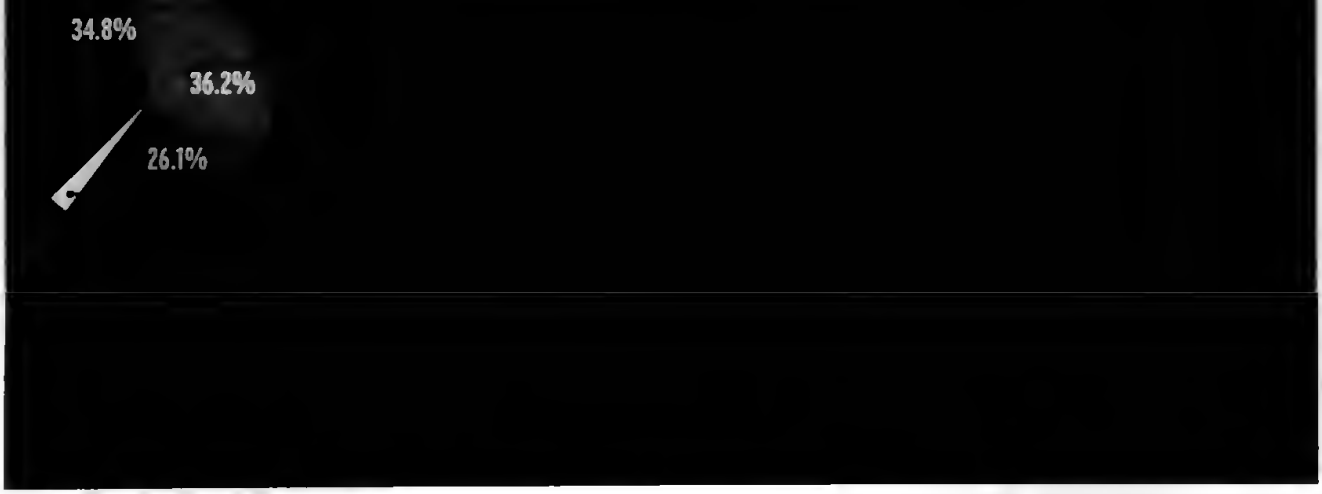

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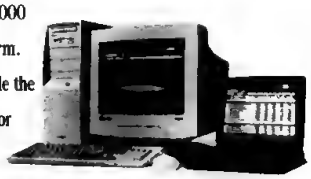

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STOCK TICKER

The Week in Stocks

Gainers

PERCENT

Transition Corp. (H)	37.0
Amazon.com	34.5
MTI Technology Corp.	28.4
Quest Diagnostics	20.6
Aeroflex Power Corporation	18.6
Paragon Systems Inc.	17.0
Sandra Computing Corp.	16.0
Storage Technology	15.0

Losers

DOLLAR

Amazon.com	16.781
Apple Computer	7.625
AT & T (H)	5.440
American Power Conversion	4.063
Policy Management Sys.	4.000
Microsoft Corp.	4.000
Computer Associates(H)	3.984
Parametric Technology	3.469

INDUSTRY ALMANAC

Symantec gets back in the game

Symantec Corp.'s (Nasdaq: SYMC) growth is almost as sure a bet as the fact that new computer viruses will spread in the next few years, several analysts say.

Financial analysts give the Cupertino, Calif., vendor a rating of Buy to Strong Buy because of its strong anti-virus product lineup; potential for upgrades; and undervalued stock. "What you basically have is a recovery taking place following some sluggish growth a year after [Symantec] acquired [Delrina Corp.'s] fax line," says Andrew Brousseau, a senior analyst at Cowan & Co. in Boston.

Brousseau says the company has had great success with the growth in 32-bit applications. And he says Symantec can look forward to more sales when companies start to upgrade applications for Microsoft Corp.'s Windows 98.

Part of Symantec's sluggishness came from its mix of applications — some successful, some not. The company trimmed its lineup last year and became more focused, says Rob Owens, a research analyst at Pacific Crest Securities in Portland, Ore.

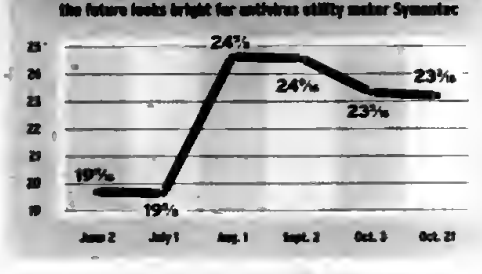
Aaron Scott, an analyst at Sands Brothers and Co. in New York, gives Symantec a Strong Buy rating. "I think the company is very undervalued. They've got a tremendous franchise value, especially with the Norton [Utilities] name," Scott says. "There's going to be 45% to 50% projected growth in the anti-virus sector over the next three to five years."

Symantec also has strong development efforts in the Internet applications market and Java, and can expect to grow as Internet in the Internet expands, Scott said. For stability, the company has WinFax, PCAnywhere and the Norton Utilities lineup.

Analysts say the company's lawsuit against rival antivirus vendor, McAfee Associates, Inc. in Santa Clara, Calif., shouldn't affect the value of Symantec stock, which has been trading around $23 per share. Symantec has accused McAfee of pirating its code. — Gordon Mah Ung

SYMANTEC MAKES A COMEBACK

Despite its much publicized legal battle with McAfee, observers say the future looks bright for antivirus utility maker Symantec



Exch	52-Week High	52-Week Low		Oct 24 2pm	Wk Net Change	Wk Pct Change
COMS	51.38	24.00	3 COM Corp	46.00	2.86	5.9
AIT	71.75	54.25	Ameritech Corp	67.13	1.63	2.5
BBND	80.25	30.00	Ascend Communications	33.38	1.63	4.6
T	58.00	30.75	AT & T (H)	49.94	5.44	12.2
BNYN	6.50	1.13	Banyan Systems Inc	3.00	0.56	17.0
BAY	81.88	15.38	Bay Networks Inc	37.88	1.38	4.0
BEL	85.25	56.75	Bell Atlantic Corp (H)	82.56	2.88	2.0
BLS	49.44	16.75	Bellsouth Corp	48.50	1.88	4.0
BRET	17.00	8.25	Boole&Babbage Technology	14.81	1.19	9.7
CS	46.36	27.38	Cabletron Systems	40.44	0.13	0.4
CCBM	21.88	8.63	Cellular Communications	17.69	0.06	0.4
CSCO	85.25	45.25	Cisco Systems Inc (H)	79.31	0.19	0.2
CMNT	7.00	3.31	Computer Network Tech	5.00	0.00	0.0
DIGI	32.75	12.63	DSC Communications	27.06	2.86	9.8
FORE	43.50	10.00	FORE Systems Inc	41.81	0.11	0.7
GDC	12.38	5.38	General Datacomm Indus	6.56	0.19	2.8
GSIS	53.00	36.11	General Signal Networks	40.19	0.50	1.2
GTE	52.25	40.50	GTE Corp	45.13	0.31	0.7
LU	80.75	44.75	Lucent Tech	63.31	1.94	2.3
MADGF	16.13	4.38	Madge Networks NV	6.00	0.50	4.0
MCIC	43.38	24.36	MCI Communications Corp	37.91	0.13	0.3
METM	8.50	3.50	NetManage Inc	4.38	0.06	1.4
NTKR	7.44	1.63	Netkit Corp	3.25	0.00	0.0
NCDI	18.25	8.00	Network Computing Devices	9.19	0.63	7.3
NWK	22.36	11.25	Network Equipment Tech	17.19	1.63	8.0
NETC	30.25	21.63	Network General	21.31	-0.63	2.8
NN	69.38	26.50	Newbridge Networks Corp	35.75	4.25	7.1
NT	113.88	57.75	Northern Telecom Ltd	93.25	12.50	11.7
NOVL	13.00	6.38	Novell Inc	9.00	0.19	2.1
ODSI	18.25	9.75	Optical Data Systems Inc	11.00	0.00	0.0
PCTL	33.50	8.25	Picturetel Corp	8.63	0.19	1.8
PTON	4.25	1.31	Proxicom Inc	2.00	0.44	17.5
RACO	5.25	1.00	Racotek Inc (L)	1.28	-0.16	10.8
RETX	8.25	3.36	Retix	6.25	0.13	2.0
SBC	80.13	47.03	SBC Communications (H)	64.81	1.26	2.2
SFA	24.94	13.25	Scientific Atlanta Inc	19.00	-2.44	11.4
SHVA	58.13	6.25	Shiva Corp	12.00	0.50	3.2
FON	52.00	37.50	Sprint Corp (H)	55.00	1.81	3.4
SMSC	18.13	9.25	Standard Microsystems Corp	13.31	-0.94	6.6
USW	41.00	29.25	U S West Inc	40.19	2.44	6.5
XIRC	31.13	3.50	Xircom	6.00	0.00	0.5
XYLN	48.00	12.50	Xylan Corp	18.63	2.06	9.3
AAPL	29.56	12.75	Apple Computer Inc	17.19	2.81	14.1
CPQ	29.56	20.50	Compaq Computer Corp	69.38	-0.56	0.8
DELL	103.88	19.00	Dell Computer Corp (H)	92.56	1.19	1.3
GTW	46.25	19.38	Gateway 2000 Inc	50.44	3.31	6.8
HWP	72.94	42.75	Hewlett Packard Co	63.88	0.19	0.1
MUEI	25.38	12.63	Micron Technology Inc.	15.63	0.13	0.8
NIPNY	74.00	53.00	NEC America	58.31	-0.50	7.4
SGI	30.31	12.63	Silicon Graphics	15.50	0.00	0.0
SUNW	53.31	25.50	Sun Microsystems Inc	33.50	1.16	3.3
DGN	37.94	13.63	Data General Corp	24.44	0.50	2.0
DEC	52.31	29.00	Digital Equipment Corp (H)	50.00	3.50	5.7
IBM	188.44	62.63	IBM	88.00	3.44	3.8
MDCD	8.13	2.38	Meridian Data Inc	4.75	-0.25	3.8
PRCM	20.13	9.00	ProCom Technology Inc	15.88	-0.38	2.3
SQNT	33.25	13.50	Sequent Computer Sys	22.06	3.69	14.3
TEAM	3.88	2.00	Sequoia Systems Inc	5.25	0.00	0.0
STRA	80.75	21.25	Stratus Computer Inc	50.88	10.00	21.0
UIS	18.88	5.25	Unisys Corp	14.13	-0.44	3.0
ADBE	53.13	33.50	Adobe Systems Inc	49.25	2.31	4.8
AMSWA	15.63	4.63	American Software Inc	11.50	0.38	0.0
APLK	51.38	3.13	Apple Inc	8.25	0.00	0.0
ARSW	53.25	17.00	Arbor Software	39.00	7.25	13.7
ADSK	31.13	21.00	Autodesk Inc	47.63	2.63	5.8
BGSS	48.00	21.00	BGS Systems Inc	31.50	-0.56	1.6
BMCS	80.50	39.63	BMC Software Inc	80.75	-0.75	1.2
BOOL	33.25	16.75	Boole and Babbage	31.38	0.88	2.9
BORL	11.00	4.75	Borland Int'l Inc (H)	10.13	0.50	5.2
BOBJY	10.75	6.63	Business Objects	13.50	0.88	6.8
CAYN	8.25	2.00	Cayenne Software Inc	3.00	0.00	0.0
CNTR	5.00	1.13	Centura Software	1.94	-0.50	16.2
CHKPF	44.50	13.63	Checkpoint Software Technolo-			
GIES (H)	60.63	8.69	gies			
CODE	39.50	21.50	Cognos Inc.	23.00	-0.25	1.1
CA	81.94	53.25	Computer Associates (H)	77.25	3.94	5.4
CVIN	10.38	1.94	Computervision Corp	2.44	-0.44	15.2
CPWR	23.13	23.00	Computware Corp (H)	86.13	-0.25	0.4
CSRE	16.88	6.63	Consware Inc	7.44	-0.38	4.8
COSFF	9.69	3.75	Cosec Corp	3.81	-0.19	4.8
DNTC	6.63	2.25	Datatec Technologies Inc	3.00	-0.38	10.6
FILE	38.50	8.56	Filenet Corp	23.00	0.00	2.2
FRTE	42.97	3.25	Forte Software	12.38	1.63	11.6
FTPS	0.63	3.50	FTP Software Inc	3.50	-0.03	0.8
HUMCF	54.25	22.00	Humanicad Corp. Ltd	36.25	4.13	10.2
HYSW	36.50	15.00	Hyperion Software Corp (H)	35.13	2.44	2.5
IIRC	19.75	11.13	Information Resources	19.75	1.94	10.6
IMXR	27.63	3.88	Informix Corp	6.75	0.13	1.8
INGR	14.19	6.25	Intergraph Corp	12.00	-0.94	7.2
LEAF	3.69	0.81	Interleaf Inc	3.00	0.38	58.3
ISLI	10.30	6.25	Infinity Inc	14.31	-0.00	4.8
INTU	40.25	20.00	Intuit Inc	33.25	5.50	31.3
TLC	25.75	5.50	Learning Co. (Toys)	10.50	2.19	13.4
LGWX	12.00	4.13	Logic Works (H)	11.00	-0.50	3.3
MAPS	12.63	3.38	Mapinfo Corp	9.25	0.25	2.8
MATH	5.13	2.38	MathSoft	4.41	0.50	24.6
MCAF	28.50	16.50	McAfee Associates	52.38	1.50	2.6
MENT	13.13	8.88	Mentor Graphics	10.00	-0.41	3.8
MPGY	59.13	12.75	Micro Focus	58.75	0.50	1.3
MCRI	9.00	4.00	Micrograph Inc	7.00	0.31	1.0
MSFT	150.75	65.00	Microsoft Corp	136.10	4.00	5.1
OBJS	3.13	0.88	ObjectShare, Inc.	1.00	-0.50	8.1
ORCL	42.13	22.50	Oracle Corp	34.25	0.61	2.4
PMTC	64.25	37.50	Parametric Technology	49.75	3.69	8.0
PSFT	66.38	30.63	Peoplesoft	62.00	1.44	2.4
PTEC	19.75	11.00	Platinum Technologies	18.00	0.13	0.7
PSQL	11.75	6.50	Platinum Software	10.16	0.13	1.3
PLAT	28.88	10.25	Platinum Technologies (H)	25.44	0.00	0.0
PRGS	25.25	12.00	Progress Software Corp	23.06	-0.88	2.9
RNBO	38.13	13.25	Rainbow Technologies Inc. (H)	26.25	-0.50	1.8
REDB	28.00	5.00	Red Brick Systems Inc	8.00	0.00	0.0
ROSS	8.75	1.75	Ross Systems, Inc	5.00	-0.00	1.0
SAPE	64.00	00.00	Sapient Corp	53.00	0.38	0.7
SCOC	8.63	3.13	SCO Inc	3.25	0.00	1.2
SDTI	44.38	21.00	Security Dynamics Tech	36.00	3.63	9.1
SOTA	17.63	8.00	Software Toolbox	10.63	1.00	8.4
SSW	38.75	27.25	Synchronic Software Inc	36.06	0.50	1.4
SDRC	50.00	13.13	Structr Dynamics Research	30.13	2.25	58.1
SYBS	29.63	12.13	Sybase Inc	19.06	0.50	2.7
SYMC	23.75	8.88	Symantec Corp	20.81	0.44	2.1

Exch	52-Week High	52-Week Low		Oct 24 2pm	Wk Net Change	Wk Pct Change
SNPS	48.75	21.75	SynOptics	39.50	0.75	1.9
SSAV	17.63	3.88	System Software Assoc	12.50	1.00	8.2
SYSF	28.88	7.88	Systemsoft Corp	8.00	-0.56	6.5
TRUV	5.19	1.00	Truevision Corp (H)	4.63	1.85	33.0
VIEW	27.00	8.38	ViewLogic Systems (H)	25.25	0.75	3.1
VMBK	11.75	3.75	Vmark Software Inc	8.88	0.88	10.9
WALK	18.25	10.00	Walker Interactive Systems	14.25	0.63	4.2
WALL	29.13	12.75	Wall Data Inc	16.50	0.38	2.2
WANG	25.00	5.00	Wang Laboratories Inc	25.63	0.13	0.5
AMZN	57.75	15.75	Amazon.com	57.50	14.75	34.5
AOL	91.13	23.00	America On-Line (H)	88.75	2.88	3.4
AIMH	30.00	16.50	Ariba Corp	25.56	1.13	4.6
CSRV	14.50	8.63	Commerce Corp	12.50	-0.50	2.9
EDFY	22.13	8.88	Edify Corp (H)	19.56	1.56	6.7
XCIT	35.50	3.50	Excite, Inc.	29.13	3.31	10.2
SERF	14.00	4.50	Infoseek Corp	10.63	1.25	10.5
LCOS	42.00	9.00	Lycos Inc	28.88	4.00	12.2
NETC	21.88	7.00	Netcom On-Line	19.13	0.44	2.2
NSCP	90.00	63.00	Netscape Comm Corp	53.13	0.06	2.6
ONET	25.00	0.50	Open Market Inc.	13.25	1.25	4.6
PSIX	14.50	5.00	PSINet	8.25	0.13	1.3
QDEK	7.13	2.00	Quarterdeck Corp	2.47	-0.16	6.0
RAFT	25.00	0.00	Raptor Systems	14.00	-0.13	0.8
SCUR	13.50	4.75	Secure Computing Corp	12.50	1.87	16.5
SPYG	10.88	0.00	Spyglass Inc.	10.00	0.88	3.8
YHOO	50.63	31.25	Yahoo! Inc	48.00	1.56	3.4
AMD	48.50	17.00	Advanced Micro Devices	26.25	1.44	5.2
ADI	36.00	18.75	Analog Devices Inc	31.00	-2.69	8.0
CHPS	26.38	3.88	Chips and Technologies	15.63	0.00	0.0
CRUS	21.88	6.88	Cirrus Logic	14.94	1.75	10.5
CY	16.94	10.63	Cypress Semiconductor Corp	11.13	-0.88	7.3
CYRIX	35.00	10.88	Cyrix	29.13	0.13	0.4
INTC	100.00	31.88	Intel Corp	88.31	1.81	2.3
LSCC	74.50	30.50	Lattice Semiconductor	52.25	-4.56	8.0
LSI	66.88	30.00	LSI Logic Corp (L)	22.44	1.81	7.5
MCRL	46.88	6.13	Micrel Semiconductor Inc	50.00	0.00	0.0
MU	80.06	24.88	Micron Technology	50.06	-2.94	5.8
MOT	80.50	44.19	Motorola Inc	63.63	-4.19	6.2
NSM	42.00	13.88	National Semiconductor	35.75	0.13	0.4
TXN	142.50	47.50	Texas Instruments	112.00	-13.13	10.5
VLSI	38.50	14.06	VLSI Technology	32.75	1.19	3.5
XLNX	38.38	31.00	Xilinx	36.69	-0.63	0.7
ZLG	39.38	16.00	Zilog Inc	20.50	0.19	0.6
ADPT	56.25	28.63	Adaptec Inc	43.25	2.13	4.5
APCC	21.00	15.00	American Power Conversion	20.00	4.63	18.6
CREAF	68.00	5.38	Creative Technology Ltd	26.38	3.13	13.4
DACE	24.50	6.50	Data Race Inc.	20.00	4.50	8.7
DTM	12.50	8.00	Data-Tape Corp.	8.75	0.19	2.2
EMC	66.13	33.75	EMC Corp	58.13	2.36	4.2
EMLX	21.25	14.13	Emulex Corp	18.25	-0.36	2.0
ESOC	33.88	28.25	Evans and Sutherland	32.75	0.00	0.0
EXBT	17.50	9.50	Exabyte	11.00	0.13	1.1
INSLF	2.63	1.00	Intelligent Nano Systems	1.19	0.00	0.7
IOMG	68.13	14.38	Iomega Corp (H)	28.63	2.50	8.6
IPLS	2.81	0.94	IPL Systems Inc.	2.13	0.13	9.7
KMAG	38.75	15.31	Komag Inc.	18.00	0.16	0.8
MTSI	34.00	16.88	Micro Touch Systems Inc.	28.25	0.00	0.0
MTIC	13.88	2.13	MTI Technology Corp	15.75	8.19	29.6
PMCL	7.81	0.09	Pinnacle Micro Inc.	0.78	-0.03	3.8
AQM	8.00	2.00	QMS Inc.	2.94	0.00	0.0
QNTM	30.00	6.25	Quantum Corp.	15.44	-2.50	8.7
RDUS	1.75	0.19	Radnet Inc.	0.53	0.03	5.8
SEG	56.25	29.00	Seagate Technology (L)	29.00	-2.19	4.8
SOS	19.00	8.75	Storage Computer Corp	8.00	-0.75	2.1
STK	58.00	33.25	Storage Technology	58.56	7.00	13.0
TEK	60.81	38.75	Tektronix Inc	61.00	-2.38	3.7
WDC	34.75	27.00	Western Digital Corp	31.81	-2.56	7.1
XIRI	68.00	44.00	Xircom Corp (H)	56.28	8.66	2.9
AMSY	27.13	15.75	American Mgmt Systems	21.00	1.88	8.8
AMLY	46.50	30.00	Analysts Int'l.	39.63	3.50	8.0
AUD	29.13	26.56	Auto Data Processing (H)	31.31	0.31	0.7
BOMI	20.38	5.75	BDM International Inc.	21.56	2.06	12.0
CATP	80.75	21.25	Cambridge Tech. Partners (H)	50.00	2.75	7.8
CEBI	52.63	29.50	Cerebral Corp	39.63	-0.63	1.6
CDO	35.25	18.00	Comdisco Inc. (H)	33.25	2.50	8.1
CPU	47.38	33.25	CompUSA Inc	35.00	-0.56	1.8
CMRZ	45.63	16.63	Computer Horizons	31.25	-0.81	2.5
CSC	80.50	57.00	Computer Sciences	73.00	0.06	0.1
PSR	49.00	16.66	Computer Task Group	38.13	-4.00	13.2
EGGS	11.13	3.63	Egghead Discount Software	8.69	0.51	0.3
EDS	61.00	37.75	Electronic Data Systems Corp	54.00	-3.81	2.3
ICO	20.88	20.75	Ikon Office Corp	35.13	3.18	8.3
INEL	8.66	2.25	Intelligent Electronics	4.94	0.56	32.6
KEA	39.00	11.50	Keane Inc.	32.00	-0.81	0.5
MICA	09.75	32.31	Micro Age Inc.	23.31	2.81	32.5
MRTH	41.88	25.88	Metzler	39.00	1.00	2.8
PMSI	30.94	24.75	Policy Management Sys.	43.31	4.44	7.5
REY	30.63	13.75	Reynolds and Reynolds	14.88	0.13	0.7
SCIS	22.25	5.75	SCB Computer Tech. Inc.	20.00	-0.75	3.6
SEIC	80.88	16.75	SEI Corp. (H)	42.38	2.75	6.8
SMIS	61.75	36.25	Shared Medical Systems	54.69	2.13	4.0
SSNE	33.50	16.00	Software Spectrum Inc	16.25	0.00	0.0
SDS	37.19	18.50	Sungard Data Systems	25.31	0.94	3.8
VST	28.00	0.00	Vanstar Corp	24.13	-0.63	4.2

KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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How to contact Computerworld

TELEPHONE/FAX

Main phone number ..... (508)-879-0700
All editors unless otherwise noted below
Main fax number ..... (508) 875-8931
24-hour news tip line ..... (508) 820-8555

E-MAIL

Our Web address is www.computerworld.com. All staff members can be reached via E-mail on the Internet using the form:
firstname_lastname@cw.com
All IDG News Service correspondents can be reached using the form:
firstname_lastname@idg.com.

LETTERS TO THE EDITOR

Letters to the editor are welcome and should be sent to:
letters@cw.com
Please include your address and telephone number.

MAIL ADDRESS

PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701

SUBSCRIPTION/BACK ISSUES

Phone ..... (800) 552-4431
E-mail ..... circulation@cw.com
Back issues ..... (508) 820-8129

REPRINTS/PERMISSIONS

Phone ..... Michelle Olk, (800) 217-7874

CONTACTING CW EDITORS

We invite readers to call or write with their comments and ideas. It is best to submit ideas to one of the department editors and the appropriate beat reporter

Editor in Chief Paul Gillin (508) 620-7724
Executive Editor Maryfran Johnson (508) 820-8179

Department Editors/News

News Editor Patricia Keefe (508) 820-8185
Sections Editor Kevin Fogarty (508) 820-8246
Assistant News Editor Neal Weinberg (508) 820-8177
Assistant News Editor Mitch Betts (202) 547-6718
Assistant Sections Editor Michael Goldberg (508) 620-7789
Online Editor Johanna Ambrosio (508) 820-8553
Online News Editor Judith H. Bernstein (516) 466-2863

Senior Editors/News

Groupware, E-mail, messaging Barb Cole-Gomolski (760) 728-8858
LANs, operating systems Laura DiDio (508) 820-8182
Network/systems management Patrick Dryden (817) 924-5485
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Senior Writers/News

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Staff Writers/News

New products, multimedia, low-end storage Nancy Dillon (650) 548-5538
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Opinions

Columns Editors Kevin Fogarty (508) 820-8246
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Department Editor/Features

Technology reviews/ Buyer's Guide James Connolly (508) 820-8144

Senior Editors/Features

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IDG News Service Correspondents

Paris bureau chief Jeanette Borzo (33) 1-4904-8001
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Research

Bob Funk, senior research manager (508) 820-8116; Laura Hunt, research analyst; Stefanie McCann, senior graphics coordinator; Mari Keefe, online researcher.

Copy Desk

Ellen Fanning, managing editor (508) 820-8176; Roberta Fusaro, assistant managing editor; Christine Ascardi Maguire, Jamie Eckle, David Ramel, senior copy editors; Kimberly Blackburn, Michelle Davidson, senior production copy editors; Pat Hyde, Monica Sambataro, Keith Shaw, copy editors; Jeremy Selwyn, senior online copy editor

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Alan Alper, editor (508) 820-8115; Mary Brandel, executive editor; Anne McCrory, Catherine McCreary, Joyce Churchill-Ferranti, managing editors; Kimberley A. Smith, assistant managing editor and online coordinator; Mary Beth Welch, art director.

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Contact: Johanna Ambrosio, Online Editor, (508) 820-8553 or johanna_ambrosio@cw.com.

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Java trade-off

CONTINUED FROM PAGE 1

work on increasing performance without cutting out platform independence. Don't gut Java's advantage, which is cross-platform," said Frank Manci, network technical manager at Colonial Savings F.A. in Fort Worth, Texas. "Keep the advantage and improve the product. It will be interesting to see how much faster it would run, but I'm afraid they're missing the whole point."

"By doing this, you're bypassing the whole point of Java and what it was made to do."
– Brian McGuire, Econometrics

Normally, Java applets and applications can run on many different platforms and browsers because they are executed by a "virtual machine." A Java native code compiler lets Java code run faster, but only on a particular target platform, such as 32-bit Windows or Sun's Solaris version of Unix. SuperCede, Inc. currently offers a native Java code compiler. Now IBM and Sun are hot on its heels.

SuperCede, a Bellevue, Wash.-based application development tool company, embedded a native code compiler in its Java development environment. Users, including Smith Barney, Inc. and Nike, Inc., write a Java application and then decide if they want it compiled for a Java virtual machine or for native machine code.

Although IBM and SuperCede officials said they offer their users the best of both worlds, Ted Schadler, a software analyst at Forrester Research, Inc. in Cambridge, Mass., disagreed. He said virtual machine performance will never match machine code.

"Native code compilation is the solution. You need to know about the operating system and the platform you're on if you want to get screaming performance. ... They know that," Schadler said, explaining Sun's and IBM's choice to go with a native compiler solution.

The idea of being able to create either platform-optimized code or cross-platform code is getting a lot of attention, said Peter Kellogg-Smith, SuperCede's director of product marketing. He said SuperCede's Java environment has 23,000 users.

And Sun and IBM, which have been the two loudest and most active backers of cross-platform Java, aren't far behind.

IBM has early previews of Java native code compilers for Windows NT and AIX platforms available for download from its Alphaworks World Wide Web site (*www.alphaworks@ibm.com/home*).

MORE TO COME

Scott Hebner, product manager of object technology at IBM, said native compilers for the S/390 mainframe architecture and the AS/400 and OS/2 are expected to roll out next year.

A Sun spokesman confirmed that the company, which spearheaded its cross-platform language, is working on native code compilers for Java but refused to give any further information.

Sun also is working on its highly anticipated Hot Spot Virtual Machine, which is supposed to make Java byte code run nearly as fast as C++ machine code in general. It is slated to be out by year's end.

Working on native code compilers for Java:

Vendor	Status
SuperCede	Has shipped a Java development environment with an embedded native code compiler.
IBM	Has an early preview of a native compiler for Windows NT and AIX available for download. Compilers for S/390, AS/400 and OS/2 expected next year.
Sun	Developing a native code compiler.

"Native code gets you performance, but if I'm going to compile down to a certain platform, why not just stick with Visual Basic and forget writing for all my Macs?" said Link Alander, coordinator of division research and systems at Western Illinois University, a 12,000-student facility in Macomb. "I've been trying to get away from that."

But Hebner said the company isn't trying to deter Java's cross-platform capabilities but rather simply speed up the performance where it can. He noted that server-side Java code that runs on one server could be optimized, while the code that runs on different clients or across the Internet would remain cross-platform.

Brian McGuire, director of Internet administration at Econometrics, Inc., a Chicago-based market research firm, said he would like the speed of native code but would want to keep his code platform-independent back on the server as well.

"One of the nice things about cross-platform applications is that you can scale up to a different server a lot easier," McGuire said. "We can move applications from NT to AIX and not have to worry about it. I can see the performance issue. But by doing this, you're bypassing the whole point of Java and what it was made to do." □

Review: VisualAge for Java, Enterprise Edition, packs power. Page 41

Web-to-host access expands

▸ FTP tool wields centralized control

By Patrick Dryden

FTP SOFTWARE, INC. is trying to make browser access of legacy applications more than a new trick for an old dog.

The Andover, Mass., vendor this week will ship Java-based software intended to make it easier for information systems staffs to manage and control browser-to-host connections.

The OnWeb Host tool kit installs on a central server, works with any gateway and sends small terminal-emulation applets to users via an intranet or the World Wide Web. That means IS managers can control the deployment and configuration of end users' software and the security of their sessions with mainframe or midrange hosts.

"The centralized control over configuration and authentication differentiates FTP from traditional client-connectivity competitors," said Cindy Borovick, an analyst at International Data Corp. (IDC) in Framingham, Mass.

Maturing software should help the fledgling Web-to-host market reach $1 billion by 2001, Borovick said. Now in the early-adopter phase, that market reached only $5 million last year but should hit $60 million to $70 million this year, according to IDC.

Beta testers said they want to replace terminals and terminal-emulating PCs with OnWeb Host software.

"The payoff for central management and better security is tremendous," said Brian Collins, a systems administrator at UniDirect Corp., a wholesale and retail software distributor in Scotts Valley, Calif.

Collins said that with OnWeb Host, he no longer has to individually configure emulation software on 100 PCs and deal with the few remaining terminals. Instead, the entire sales force downloads a tiny emulation applet while the server handles most of the work.

And the server's authentication steps keep sales information confidential, Collins said. "We know who the users are and where to steer them, so they can't just enter systems and search around," he said.

Corel Corp. tested OnWeb Host with its Video Network Computer — to be publicly demonstrated for the first time this week. "We will recommend it to buyers who want to replace terminals," said Charlie Quinn, a project leader at Corel in Ottawa.

OnWeb Host costs $495 per server and $109 per client. It offers IBM 3270 and VT 52/100/220 emulations, with 5250 support to come in the next version. □

ONWEB HOST

- Runs on any Web server and browser
- Shifts processing to client or server
- Works with any gateway
- Centralizes control over user software and access
- Takes user access privilege from existing databases
- Secures sessions by authentication, encryption and auditing

R/3 applications give users control over routine tasks

By Randy Weston

EMPLOYEE, SERVE THYSELF. That's the idea behind a new batch of client/server business applications from SAP AG.

The German software giant this week is adding a slew of new self-service applications to the R/3 lineup so that a company's employees can handle administrative tasks themselves. The modules can be accessed via World Wide Web browsers.

The new self-service capabilities include ordering office supplies and signing up for training or direct deposit of paychecks. The goal is to off-load those routine tasks from a company's administrative staff.

SAP already has on the market 10 self-service applications for human resources tasks such as changing a home address or the number of dependents.

Georgia-Pacific Corp. in Atlanta uses the applications throughout the enterprise.

Employees can handle a variety of tasks. They can see what training courses are offered, enroll in the class and keep a running log of courses already taken. Employees also can get details about the class, such as location, time, days offered and prerequisites. □

COMMENTARY

Nader may be the true Microsoft threat

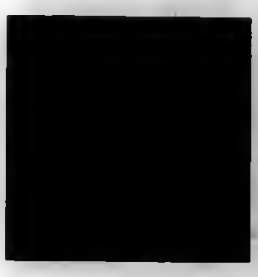
Dan Gillmor

You may not have heard of Dan Morales, and until last week, few had heard of Joel Klein. But you've definitely heard of Ralph Nader.

Klein is head of the U.S. Department of Justice's antitrust division. Morales is the attorney general of Texas. Both supervise lawyers and investigators who are looking into business practices at Microsoft. Based on the record to date and notwithstanding last week's allegations, government investigations of Microsoft tend to be cause for yawning.

When Nader joins the fray, though, something fundamental changes. The consumer activist has made plenty of miscues over the years and carries real baggage. But he's still a household name. So when he loudly challenges Microsoft's monopolistic practices and talks starkly about the implications of unbridled power, people with no ties to the IT industry may finally start to pay attention.

The public is visibly unalarmed; a recent poll found Microsoft the most admired company in America. That stems from several circumstances, including Microsoft's public relations spending and expertise, the fact that some of its products are superb, technology's unique price/performance trend and society's repellent tendency to equate wealth with worth.



The Justice Department's action against Microsoft last week (see stories, pages 1 and 8) may well fit the pattern established in its 1995 consent decree: closing the barn door, as the apt cliche goes, after the horses have escaped. The consent decree essentially said, "Now that you've established a monopoly, please don't do it again," and Microsoft laughed it off as the joke it was. The exception to the rule came when Justice nixed Microsoft's proposed buyout of Intuit on the grounds that it would thwart future consumer choice.

In Washington, the Federal Trade Commission (FTC) has shown the most concern about concentration of power in the technology business. But it has rejected pleas from several U.S. senators to take up the Microsoft case, saying it wouldn't duplicate Justice Department efforts.

Meanwhile, state attorneys general have begun probing Microsoft's hardball business practices. Not only have the states gained experience in working together on big issues such as moves against the tobacco industry, but state politicians also have discovered political rewards in promoting consumer causes. Even Republican attorneys general have ascended to governorships partly on the strength of proconsumer activities, not to mention the genuinely conservative notion that market competition is better for society than the alternative.

Nader's interest in the issue may prove even more pivotal. On Nov. 14 and 15, his organization is holding an "Appraising Microsoft" conference in Washington, where Nader and other speakers will undoubtedly conclude that Microsoft's practices are a threat to consumers. Microsoft hasn't said whether it will send anyone to challenge that notion; the company would be uncharacteristically foolish to ignore Nader and hope he'll go away.

Nader may be showing some tarnish, but the media and public still pay attention to what he says. Note that Janet Reno and Justice didn't act until Nader did. Coincidence? Maybe. But Nader is asking many of the right questions. The prospect of a single company controlling the choke points of tomorrow's commerce and communications should be frightening.

One of Nader's lieutenants in his examination of Microsoft is James Love, who heads several Nader organization spin-offs that — among many other activities — have done excellent work to make government-collected information available to the people who paid for it: the taxpayers. Don't underestimate these guys.□

Gillmor is computing editor at the San Jose Mercury News. *His Internet address is dgillmor@sjmercury.com.*

IBM: Your one-stop E-commerce shop?

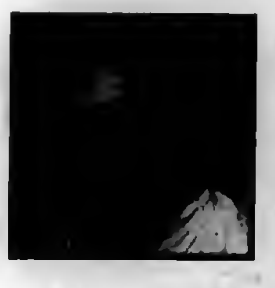
David Moschella

Where would you go for electronic-commerce services? Who's the leading vendor? The safe choice? IBM has begun a global campaign suggesting that its far-reaching capabilities make it the logical electronic-commerce choice. Do you buy it?

Let's start with the basics. Electronic commerce isn't like PCs, servers or contract programming. It's much more of a concept than a discrete product or service. Leading in concepts is more difficult than leading in actual businesses. Who was the leading vendor of client/server systems? Not clear. Who's the leading Internet vendor? Again, too vague to say. Electronic commerce will likely follow a similar path.

The logic behind IBM's positioning seems to be that because electronic commerce cuts across a wide range of hardware, software, networking and services, the vendor with the most background in all those areas should emerge as the market leader.

In a way, it's a brilliant bit of marketing spin. Given IBM's vast array of activity, it's nice to have a binding organizational theme. From a brand perspective, electronic commerce meshes beautifully with both the best of IBM's past and the promise of today's Internet technologies. Being viewed as the electronic-commerce company would certainly be a lot snazzier than being seen as a giant services company with a mixed bag of hardware and software products.



So the marketing pitch resonates. But what about the reality?

The underlying question is, just how important is it to have lots of electronic-commerce pieces? Unfortunately for IBM, the answer is: not very. The idea of one-stop shopping has been obsolete since the early 1980s. Systems vendors are forever forecasting that it's about to come back. But it never does.

Being best-of-breed in particular areas is much more important than having a wide range of non-market-leading products. And given the diverse hardware, software, networking and services that go into electronic-commerce offerings, no vendor can come close to having all the pieces. So if significant multivendor integration is unavoidable, how much does it matter if one vendor has more pieces than another?

IBM's products and services will, like everyone else's, have to stand on their own. Here, the situation is mixed. In hardware, other than its older proprietary lines, IBM's position has weakened. Compaq is the clear PC leader, as is Sun in the Unix arena. In the critical Windows NT space, IBM is no better than anyone else. In software, IBM's internally developed products almost never succeed outside its own proprietary base, so acquisitions have been the company's only path forward.

Most of IBM's hardware and software products aren't particularly important to most customers' intranet, extranet and electronic-commerce plans.

What's important is IBM's services. If the company is to be an electronic-commerce leader, it needs to do it here. But services leadership won't come from having lots of pieces; it will come by solving customer problems using whatever technologies the market makes available.

In the long run, the business of providing advanced application services is becoming evermore separate from the business of selling general-purpose hardware and software products. And whether it's IBM, Digital, NCR or Unisys, the future of the traditional systems companies continues to become increasingly inseparable from the future of their services initiatives.□

Moschella is an author, independent consultant and weekly columnist for Computerworld. *His Internet address is david_moschella@cw.com.*

The Back Page

altcw

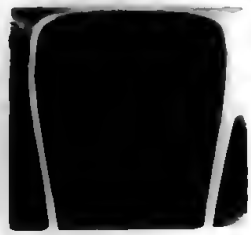
Dispatches & pages from the fringes of the electronic frontier

Computerworld INDEX

Number of programs installed on an average home PC:	48
Number of programs actually used per month:	6
Worldwide predicted rate of business failures from the year 2000 computer problem:	3%
U.S. paper consumption in 1995:	44M tons
Projected U.S. paper consumption in 2015:	66M tons
Hospital CEOs who use the Internet daily:	38%
Hospital CIOs who use the Internet daily:	65%
Number of countries in which Amazon.com has customers:	160
U.S. organizations that have an intranet:	59%
U.S. organizations predicted to have an intranet next year:	77%

Source: Media Metrix, Inc., New York; Reuters; CAP Ventures, Norwell, Mass.; Midwest Research, Sterling Heights, Mich.; Amazon.com, Inc., Seattle; International Data Corp., Framingham, Mass.; Cap Gemini America, New York

FOR YOUR LISTENING PLEASURE



When you're driving in an unfamiliar city, it's hard to know which radio stations play your favorite type of music. So Cadillac in Warren, Mich., has become the first U.S. automaker to offer the Radio Data System. The system automatically scans the airwaves and tunes in to stations that play jazz, classical, country, rap or whatever format you select.

Digital snafus

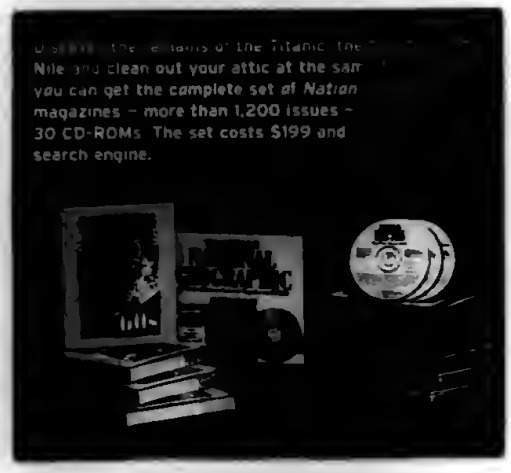
A rat urinating on a power cable caused a short circuit that disrupted tower communications at a Colombian airport for 40 minutes last month, Reuters reports.

TOP [illegible] OFFICE COMPLAINTS

1. Office is too cold
2. Office is too hot
3. Not enough conference rooms
4. Office isn't clean
5. Not enough storage/filing space
6. **Computer problems**
7. Poor indoor air quality
8. Inadequate parking
9. No privacy in office cubicle
10. Smokers outside the building are offensive

Base: Survey of 3,046 facility managers

Source: International Facility Management Association, Houston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30 CD-ROMs. The set costs $199 and
search engine.

Inside Lines

Headline of the week

When the Justice Department tries to slap the most powerful software company in the world with a $1 million-per-day fine, even the daily tabloids take notice. *The New York Daily News* made the story its front-page splash, running a color photograph of Attorney General Janet Reno alongside a picture of a Windows 95 box. Atop the artwork was the headline: "Reno to Microsoft ... Byte this!"

Not for Justice

A browse through the documents filed by the Justice Department turned up the following tidbit. Here's Microsoft's internal take (from a slide presentation by Microsoft VP Paul Maritz) on why it's so afraid of Netscape and Java: "The Problem: Browser Market Share ... Why does it matter? Pages become applications. Netscape/Java is using the browser to create a 'virtual operating system.' Windows will become devalued, eventually replaceable."

That's final. Next problem?

In his usual efficient manner, Bill Gates took care of that pesky $1 million-per-day fine business by buying the U.S. government. Or so says a fake press release that went around the Internet last week. "It's actually a logical extension of our planned growth," Gates says in the phony release. The House and Senate would be abolished under the plan. "Microsoft isn't a democracy, and look how well we're doing," Gates allegedly quips.

Keen is leaning

Lotus officially will roll out its line of Java application components — code-named Kona — on Nov. 1 in New York. The suite includes a spreadsheet, word processor, E-mail client, calendar, project manager and graphics application. The Kona applications originally were due last month, but Lotus now promises delivery by year's end.

The importance of being Ernst

You'd have thought that last Monday's engagement between Ernst & Young and KPMG would have rated as one of the most significant events in the history of both companies. Not so, it seems, for some folks at Ernst & Young. Well into Monday afternoon and several hours after the formal announcement, there was very a word on the subject at Ernst & Young's Web site (www.ey.com). Its lead news story late Monday afternoon? Something titled "Ernie allows quick purchasing of IT solutions." Go figure.

It's no laughing matter

Several Dallas businesses recently found anyone viewing computer users to stop sending jokes via E-mail. Audits last month revealed jokes in 49% of messages at one Motif site and 40% of messages at Software Spectrum. The August audit at Texas Instruments showed 20% of E-mail messages contained jokes.

Sometimes industry vendors don't trust the trade press to provide an objective view of their products. So they take it upon themselves to do our jobs. For example, a large storage company recently pitched a story idea to a Computerworld reporter with these restrictions: The story must run in the first 15 pages of Computerworld, take up two complete columns of print, include the vendor's name in the headline and exclude all other competing vendors. Maybe they'd like to write it, too. If you have news you'd like to see in Computerworld, send it to News Editor Patricia Keefe at (508) 820-8183 or E-mail her at patricia_keefe@cw.com, no strings attached.

When you're shelling out $4,000,000 to ring in the Year 2000, remember:

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